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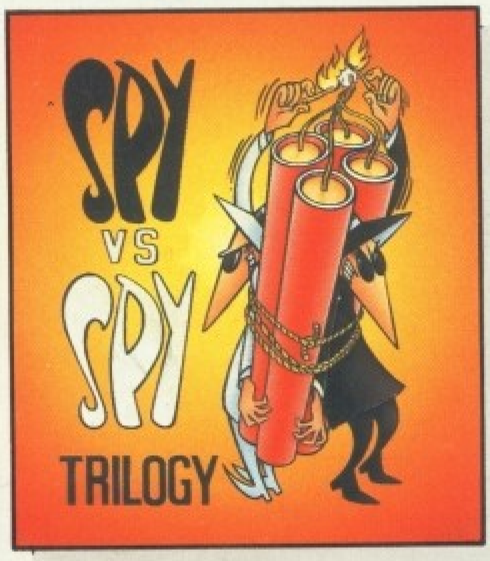
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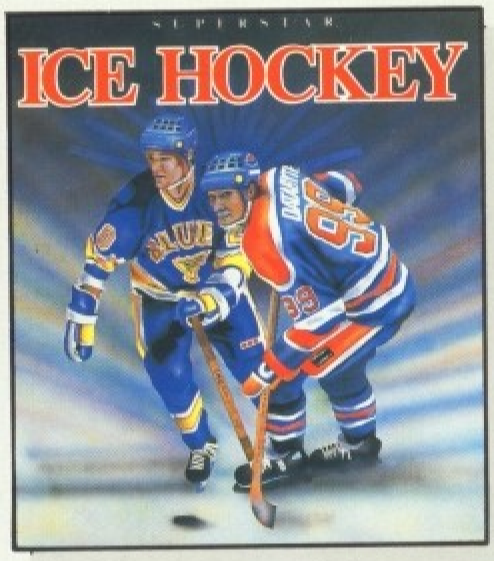
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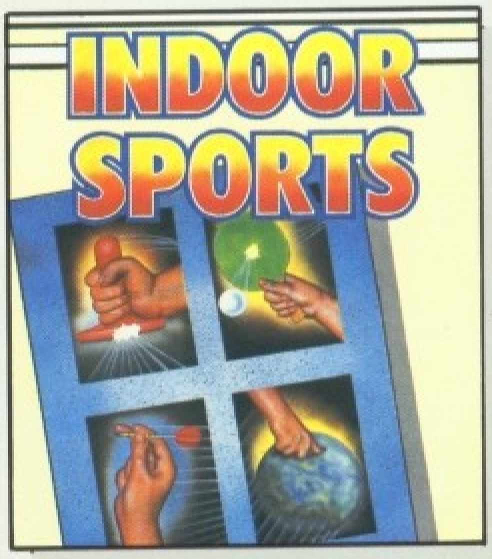
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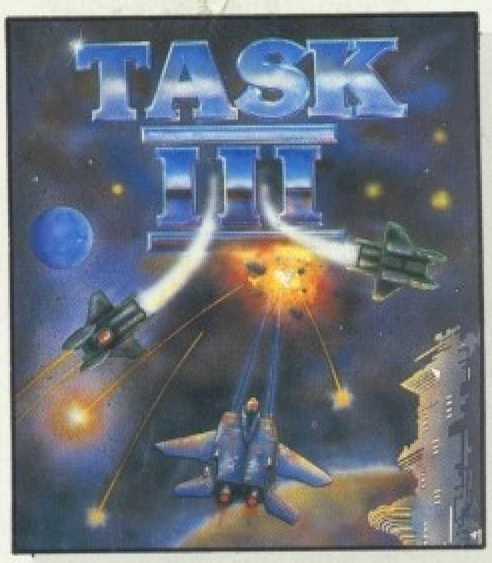
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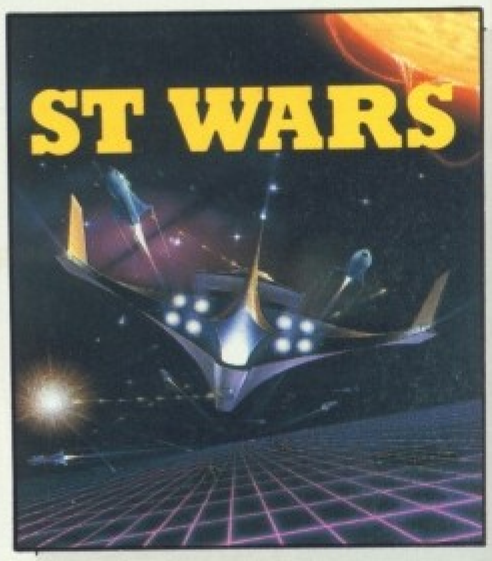
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WELCOME to *Amiga Computing.* A magazine produced by a staff which lives and breathes the Amiga – from days of careful planning with Superbase to long nights playing Arkanoid.

If you enjoy your Amiga as much as we enjoy ours then this is the magazine for you.

We've assembled a team of top writers to lead the way. But we need your help too. *Amiga Computing* is more than willing to be swayed by your likes and dislikes.

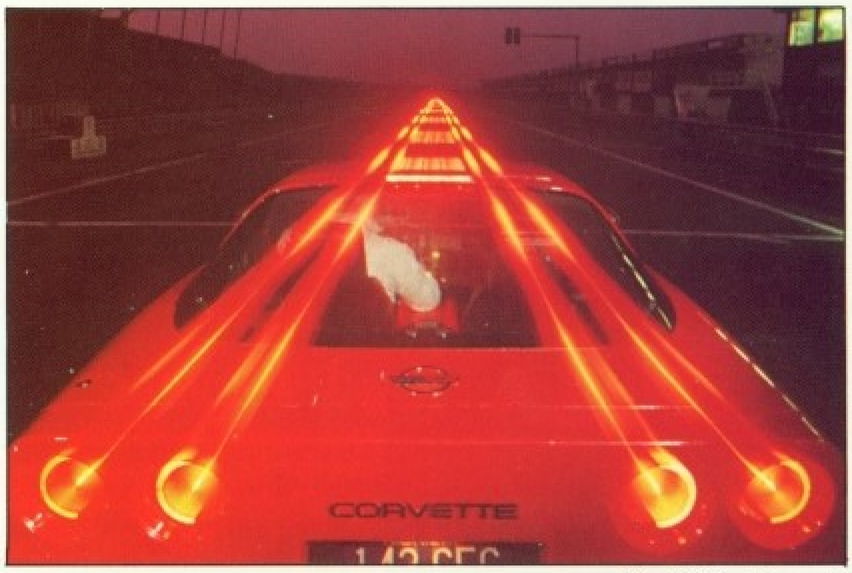
To find out your preferences, and help us tailor the magazine to meet your needs, please complete and return to us the survey form on Page 81.

It will help ensure the magazine reflects YOUR interests – and it could result in some unexpected goodies coming your way as well.

Simon Rockman



J. San and the Argonauts Page 24



Test Drive Page 49


REACH FOR THE STARS
at
The 11th Official
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Returning to London with a celebrity supporting cast
Champagne Suite and Exhibition Centre, Novotel, Hammersmith, London W6
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Say Hello to Adam Faith
Mystery guest appearances
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Visit the Business World sector – the show within a show. See how your company can benefit from the power and versatility of Commodore machines
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Amiga catches up with ST



Atari 520ST



Amiga 500

A SURVEY of 100 computer dealers has revealed that sales of the Amiga are now running neck and neck with its arch rival, the Atari ST.

Conducted by *Amiga Computing*, the research showed that within the last month demand for the Commodore machine increased threefold.

Although the trend is national, some major outlets in the stockbroker belt of the South East and the industrial Midlands report sales currently running at two to one in favour of the Amiga.

The one black spot seems to be the North East. But as one dealer put it "computer sales are pretty low up here anyway".

One Liverpool based supplier confided that he had been inundated by ST users wanting to trade in their machines for Amigas.

The reason? "Superior sound and graphics", he said.

Typical of the dealers who have seen a dramatic upsurge in demand for the Amiga is Steve Kingston of Bath Computer Shack.

"Until a few months ago, we were selling 100 per cent Atari ST", he told *Amiga Computing*. "But since Commodore has increased its promotional activities, this situation has changed.

"Originally we kept limited stock of the Amiga, often finding that potential customers looked at them, then went and bought an ST.

"But now we view it as a mainline product on the same footing as the ST".

Steve Kingston even offered a pen portrait of the people buying both machines.

"The ST buyer I regard as an XR3 type aged from 25 to 35. But, strangely enough, the Amiga purchaser seems younger, with the exception of those people from the vertical markets such as video production".

The real star of the Commodore Show

THE stars are coming out for the 11th Official Commodore Show in London, on June 3 to 5.

Olympic gold medalist Tessa Sanderson, TV celebrity Adam Faith, Radio One disc jockey Bruno Brookes, Chelsea soccer players and many other famous names will be joining the throng at the Novotel, Hammersmith.

But the real star of the show will undoubtedly be the Amiga – now beginning to make a real impression in the UK computer marketplace.

Highlight of the first day will be a seminar on Amiga graphics capabilities – the very area of performance which is spearheading the machine's breakthrough into home, education and business sectors.

Leading experts in the field of computer graphics will be making presentations and answering questions from Amiga users.

Early indications are that there will be plenty of new products for the Amiga making their debut at the show.

Among the more colourful is a DTP package called Comic Setter from HB Marketing. It allows users to create their own cartoons in colour – incorporating characters, backdrops and even speech bubbles in a variety of fonts – all at a price of under £100.

Adamsoft will be displaying a range of software for the Amiga that has been specially imported from America for the show.

The Novotel will also be the launching pad for three new Amiga packages – word processor TextPro, assembler program AssemPro and powerful database DataRetrieve – priced around £50 but offered at special show prices.

Catering for the more advanced Amiga user, Ariadne Software will give the first public showing of its new interactive communications system, priced £500. It comprises Microtext, an authoring language to help create computer-based dialogue for interactive video productions, and the Video Player Device, software that enables the user to control any laser disc, compact disc or video tape player with an RS232 port.

Also on show for the first time is Ariadne's new Amiga video editor for use with Sony U-Matic tape recorders. And details will be available of the Amiox expansion board for the Amiga 2000 which contains a further eight serial and four parallel ports.

Metacomco – designer of the Amiga operating system – is launching an enhanced version of its popular Pascal package.

New features include random access, separate compilation, dynamic strings and a user interface to the Amiga Dos. Price £89.95.

Evesham Micros will be selling a 3.5in double-sided disc drive with a storage capacity of 880k for £99.95.

Meedmore Distribution is launching its Am-Com interface cable which allows the Amiga to use printers originally designed for use with the Commodore 64 and 128. Price £79.95.

On the lighter side, three new games will be released by Anco Market – Pinball Wizard price £19.95, Mike the Magic Dragon and City Defence priced £14.95 each.

The show will also feature a number of specific attractions for Amiga users. These include a special section for music makers, and Business World which is almost a complete show within the show.

Plus there's a chance to see all the latest entertainment and serious software in action – and an opportunity to talk to many of the names behind the programs, the authors of top Amiga packages.

A money-saving advance ticket order can be found on Page 85.

Battle of the German giants

Gregor Neumann reports direct from West Germany, the major European battleground for the war between the Amiga and the Atari ST

IT'S hardly surprising, given the importance to Commodore of the West German market (second only to the USA), that the company watches its sales figures over here with an eagle eye, and no doubt a nervous twitch.

Commodore's main 68000 rival is of course Atari, and the battle between the two companies on the Amiga/Atari ST front, which has been simmering ominously for 12 months or so, is now really hotting up.

Look at the statistics. By May 1987 only 27,000 Amigas had been sold in Germany. That figure has now risen to 160,000, with the biggest slice of the cake going to the Amiga 500, of which 100,000 units have been sold.

Over the full range of machines, the Amiga is still 100,000 units behind the Atari. More than 150,000 Atari STs have been sold in the last 12 months, making a total of a quarter of a million units.

But Commodore is catching up fast, and I think we can soon expect to see equilibrium between the two machines. After that – maybe even before – it will be no holds barred.

The breakthrough came with the rapidly falling price of the 500. The overpriced Amiga 1000 was long seen by many people as a dream machine no one could really afford. And last year's retail price for the 500 – 1,300 DM (about £430), without monitor or second disc drive – was proving simply too high to dent the competition.

However, the 500 is now available in certain retail outlets for 975 DM (£320). This is not only an astoundingly low price for a superb professional machine, but it also means that the psychological 1,000 DM barrier has been crossed, a significant consideration in Germany.

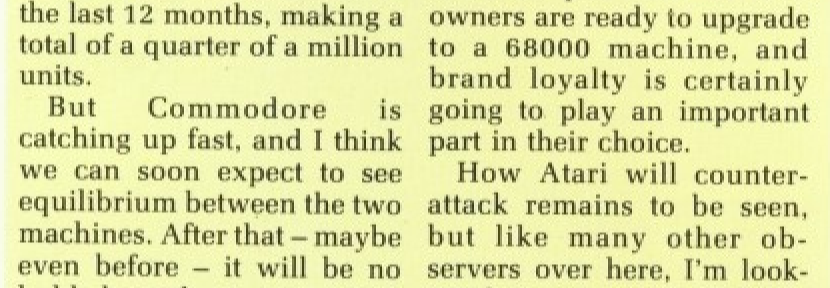
Of course, in the 8 bit arena, Commodore still reigns supreme. The C64 is by far the best-selling home computer in Germany – there are a staggering 1.6 million machines out here, with the Amstrad CPC running a poor second at "only" half a million.

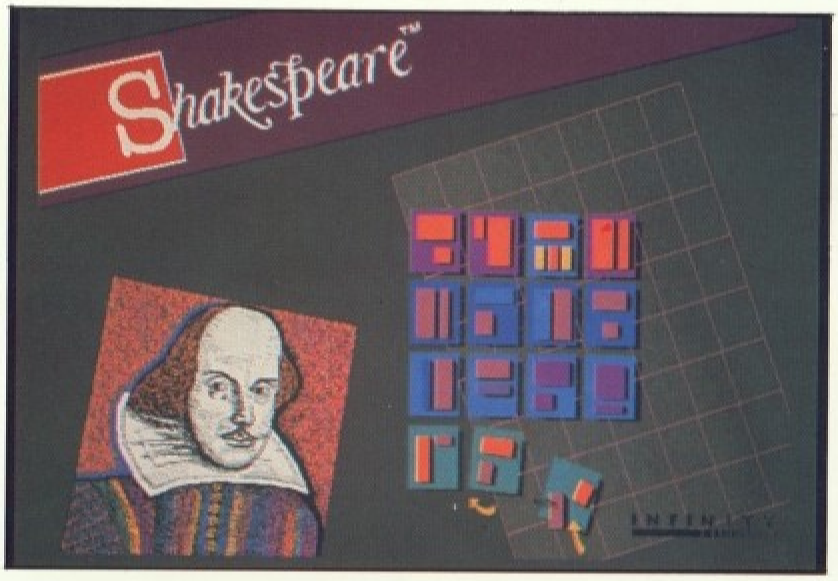
Now, according to a reliable source of mine, more than 80 per cent of C64 owners are ready to upgrade to a 68000 machine, and brand loyalty is certainly going to play an important part in their choice.

How Atari will counter-attack remains to be seen, but like many other observers over here, I'm looking forward to watching the cut and thrust which is now bound to ensue.

It's unlikely, however, that we will see any major moves forward on either the Amiga or the Atari marketing and sales fronts before the autumn. Only dedicated German freaks would consider buying a new machine as against spending his money on skiing or lazing on a sunny beach.

And while he does so, the battle lines are being drawn up ready for his return.





Publishing in colour

THE first colour desktop publishing program designed for the Amiga family is one of a number of sophisticated packages now available by mail order from American software house Infinity.

Shakespeare fully supports colour printers and lets users manipulate text and graphics in a multi-tasking environment. It costs $225.

Galileo 2.0 is the first astronomy program for the Amiga with 512k ram – a database of thousands of stars which takes full advantage of the machine's graphics, high resolution and 68000 processor speed. Price $69.95.

Hot Licks is a 20 channel digitised keyboard player for hobbyist musicians and professional composers alike. Price $49.95.

Infinity (0101 415 420 1551) is also offering Go for the Amiga, a version of the 4,000 year old Chinese game of strategy, and world tennis simulation Grand Slam which has already been seen in the UK.

Both cost $49.95.

Feed in the video

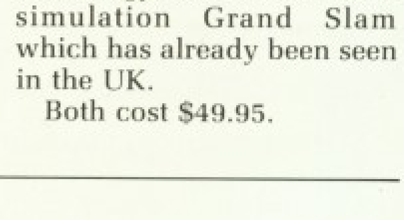
NEW from BC Marketing (01-907 3636) is a real-time video digitiser that allows the user to take input from any video source and convert it into a format capable of being manipulated by the Amiga.

The VDAmiga VD3 can digitise in real time at 1/50th of a second and store the picture in its memory. It is then transferred to the Amiga using the printer port.

Update rate may be up to 10 frames a second, depending on the resolution used. Each line can be sampled either 320 or 640 times.

A complete PAL standard picture can be read by the VDAmiga, but the Amiga is only capable of displaying 256 out of the PAL 312 lines. Price £550, with colour digitiser £795.

Blitter blaster



THIS exclusive screen shot shows Prism Leisure's new game Terroforce – a scrolling shoot-'em-up written by Justin Gavinovic.

Your ship can pick up extra weapons which will allow it to fire in all four directions. There's full screen blitter scrolling and superb sampled sounds too for the price – £12.95.

Mass storage is cheaper

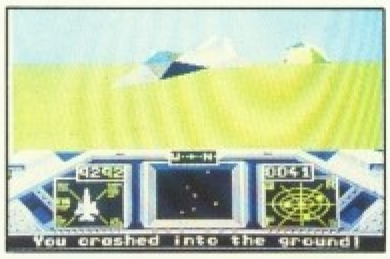
A NEW development in mass storage for the Amiga claims to offer 20Mb of storage for only £50 and 200Mb for £500.

Burocare Computer Systems (01-907 3636) says its 5.25in removable mass media drive is the first in a series of peripherals "aimed at creating an ideal workstation based on the Amiga 2000".

It utilises 20Mb removable cartridges as its storage media. Each cartridge can be formatted for AmigaDos, or MSdos when used with the XT-Bridgeboard, or a mixture of both.

The Burocare Removable Drive claims several advantages over rigid-disc Winchester and Kodak 10Mb floppy drives although it comes more expensive.

First look at Stealth



THIS is the first screen shot from the Stealth fighter game which is being written by Argonaut Software for Electronic Arts.

The game is still some way off completion, but promises to be very fast with plenty of scenery and true flight dynamics which will put the player in the pilot's seat.

Business information

MICROLINK, the UK's most innovative computer communications system, has joined forces with the University College of Swansea in a unique instant electronic information service for businesses.

With the new service – called ExpertLink – subscribers can get free advice from experts in various fields.

They can also discuss business problems with others who may have experienced similar difficulties. As well as being instant and free, this access to professional expertise comes with no strings attached, no axe to grind and no commercial bias.

The team at Swansea University which is answering queries includes three professors, several PhDs and experts in a large number of fields including management science, ergonomics, overseas trade, electrical and mechanical engineering, foreign languages, psychology and sociology.

More peripherals

COMMODORE has now announced a range of new Amiga peripherals, among them two Genlock video interface boards for the Amiga 2000.

The A2300 is a budget genlock based on the board for the A1000. The A2350 Professional Video Adaptor is aimed at television stations and video production houses to provide some vision mixing and fast frame grabbing.

The A2090A is a new hard disc controller for the Amiga 2000. Workbench 1.3 will provide software enhancements for all Amigas.

The A2052, 2Mb ram expansion board will be replaced by the A2058 an 8Mb board which will be available in different sizes.

Commodore's 68020 board will double the speed of an Amiga 2000.

The board will run the Unix multi tasking, multi user operating system.

Two exciting new monitors are the A2080, a long persistance colour display, and the A2024 offering resolutions up to 1008 by 1024 in four levels of grey on all 1MB Amigas.



N. American eyes are on Europe

By JIM BUTTERFIELD*

TO start off this column it might be well to look back at the Amiga's history over the past two years or so. In the summer of 1985, Commodore announced the Amiga with a big splash in New York City.

The Amiga 1000 became available almost immediately. A few hardy European pioneers obtained North American NTSC Amigas, which were not compatible with European television systems. But users in North America had a head start.

The first Amigas came with an operating system identified as 1.0. It was a system for brave souls, failed frequently and had a penchant for wrecking disc data.

The 1.1 system which followed treated discs with more respect. System crashes – meeting the black guru – still occurred, but much less often. By the time Commodore announced its Enhancer Software (1.2), the Amiga was a stable and usable computer for business and pleasure.

And the now stable operating system provided a base for the launching of two new machines, the Amiga 500 and the 2000.

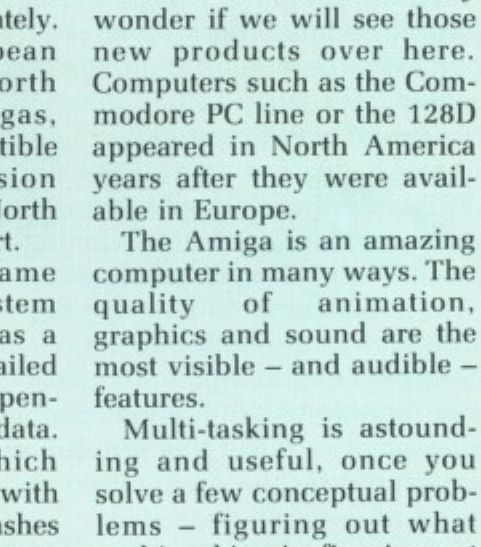
You may be surprised to hear that we watch Europe closely for new product announcements. Each spring the Hanover Fair brings interesting announcements from Commodore which are flashed over the telecommunications networks.

And then we collectively wonder if we will see those new products over here. Computers such as the Commodore PC line or the 128D appeared in North America years after they were available in Europe.

The Amiga is an amazing computer in many ways. The quality of animation, graphics and sound are the most visible – and audible – features.

Multi-tasking is astounding and useful, once you solve a few conceptual problems – figuring out what multi-tasking is, figuring out how to invoke it, and figuring out what to use it for.

American teens have favourite words that are often applied to the Amiga. Awesome! Radical! They are literally true.



**Jim Butterfield, who lives in Toronto, is acknowledged world wide as the Commodore guru*

Face to face



A limited band of software developers spent a weekend discussing what the programming community needed to do to get the best from the Amiga. Simon Rockman tagged along...

THE Amiga is a complicated beast. When you slip a disc into the side of your 500 you may not appreciate the hours of soul searching which have gone into producing the program.

Programmers of micros have not had to deal with an operating system as complicated as AmigaDos and Intuition or chips as advanced as Angus, Denise and Paula.

Many man years went into designing the machine, and it would be near impossible for any one programmer to understand everything about the Amiga. The Amiga developers need to be coordinated and share solutions to problems.

Commodore, the software house Ariadne and distributor ASAP recently organised a meeting of developers to streamline the flow of information.

The attendees were not expected to cover the entire gamut of the developer community, but they tried to be representative. The majority of developers were working on serious applications for the Amiga 2000. A couple of people represented Compunet and CIX online systems.

IT was felt that to improve communications all developers should use modems. Gail Wellington, Commodore's general manager for worldwide software and product support, and Dr Rahman Haleem, technical support manager for Commodore UK, represented Commodore.

The games software houses were represented by Jez San of Argonaut, who may run one of the smaller software houses but is a big name in the Amiga community. HB systems represented the distributor network and Martin Lowe of The Amiga Centre in Scotland took on the mantle of dealer representative.

David Parkinson of Ariadne demonstrated the advantages of improved developer communication by discussing the different approaches to Amiga programming. While he appreciated that many games need to dispense with the operating system for increased speed and to gain extra memory, he felt that the machine really shows its true colours when programmed the way it was meant to be used.

He said that too many games adopt the attitude that "it's macho to kill the operating system – only wimps use an OS", and that the way AmigaDos is constructed allows for more flexibility.

If the top level of Intuition does not do what the programmer wants, the next step is to address the graphic libraries; below that the programmer can call individual functions. Such an approach coincides with the "house feel" of the Amiga.

Fail to bare the soul of the machine and you will run into problems. David's talk was solid, if sometimes contentious, showing that he, like most of the people around the table, has a real affection for the Amiga.

TALKS were given by representatives of Compunet and CIX. The developers seemed to concur that a dial-up system would make it easier for them to share information. CIX seemed to offer a more suitable service but lacked local call access. Compunet suffered from slow modems and a user interface which made it difficult to handle large conferences.

A "task force" of Jez San (Argonaut), Simon Trammer (Precision) and David Parkinson will help to decide which system should be used.

This is the year the 2000 really takes off

THE best part of the meeting was saved until last. Gail Wellington outlined Commodore's plans for the next year. Many of the products have been shown at trade fairs but this was the first time they had all been talked about in such detail. Most, but not all, of the products are aimed at A2000 owners.

The A2031 is a video card which allows a second colour monitor to be connected. This is particularly useful for lectures where the standard RGB port may be used to drive a video projector.

The professional video market is clearly important to Commodore – the Amiga 1000 genlock card has won Commodore a lot of friends. To capitalise on this it has two new cards for the A2000. The A2300 is a "cheap" genlock, with the same specification as the A1000 genlock but without the sound.

There is simple video titling software. The A2300 is classed as semi-professional, so it won't be found in big television stations – it is more likely to be used by schools and colleges which want to make training films.

MORE advanced users will want the A2350 Professional Video Adapter (PVA). This is a two card genlock for the Amiga B2000 only, developed in conjunction with the New York Institute of Technology. It offers software control of the genlock with frame grabbing and can freeze in real time. It will not digitise in real time but all the processing is digital for accuracy.

The PVA can cope with any Amiga resolution, including HAM, and the advanced software can optimise the palette. Software can be used to switch between different video sources, as well as mixing the Amiga signal. This professional adapter will encourage the use of Amigas throughout the British television community.

All hard disc users bemoan the need to start the system up with a floppy disc. The 2090A will cure this. It offers the same functions as the existing 2090 hard disc controller, but will auto boot with Kickstart 1.3. This is a new rom for the A500 or A2000, and a disc for the A1000 should be available this summer.

ALL Amiga users should be interested in the 1.3 Workbench. This works with the existing Kickstart 1.2 but offers many enhancements. There are 21 printer drivers which include the H-P Paintjet and Xerox 4020. Programs which use the standard libraries will find that the mathematical capabilites have been greatly improved, maintaining full IEEE floating point accuracy.

There is automatic detection for the 68881 maths co-processor, so some maths intensive programs will be considerably faster. The text display routines will be faster and the fast file system speeds hard disc access times by as much as 600 per cent. Commodore has signed a deal with Adobe which has allowed it to licence Times Roman and Helvetica fonts.

The world shortage of dynamic ram has not really affected Commodore's ability to fulfil the promise of an 8Mb memory board for the A2000. The A2052 2Mb board will be discontinued – although I know of one editor who is still keen to get his – and replaced with the A2058, 8Mb board.

This uses the new 1Mb chips as opposed to the standard 256 bit chips which are causing Atari and Amstrad such headaches. The board will be sold with 2Mbs of ram and upgraded to 4 or 8Mb by the user. This will be more expensive than a 2052 and available soon.

The really exciting news was about the A2620 68020 processor, again for the A2000. This runs at 14MHz – twice the standard Amiga speed – and has a 14MHz 68881 maths co-processor. Anyone who is doing a lot of calculation might find it worthwhile to swap their 68881 for a 25MHz version of the chip. As standard, the board comes with 2Mbs of ram, although it can be upgraded to 4Mbs. Indeed this expansion is necessary if you want to run Unix.

UNIX is the reason why the A2620 has a 68851 memory management unit. It is a multi-tasking, multi-user operating system which is common on mini and mainframe computers. To be able to offer it at micro prices is a real achievement.

Commodore will be shipping AT&T version 5.3 of Unix together with its own window operating system. This maintains a high degree of software compatibility with Xwindows, but runs very much faster. Unix will mean that the Amiga will find its way into many more universities.

A long-persistence monitor has been promised for a long time. This will reduce the flicker in the interlace modes but cause fast moving objects, like the mouse pointer or alien craft,

▶

◄

to blur. The Commodore A2080 has a high resolution, non-glare screen and stereo sound, but future Amiga developments may mean that the A2080 does not make it as far as the home computer market. The A2080 looks like a 1084, the standard Amiga monitor, which will also be upgraded to stereo.

The long persistence monitor would be the best thing Commodore could offer for desktop publishing if it were not for the A2024 monochrome monitor. This needs a 1Mb Amiga but otherwise it will work with all Amigas. It gives a screen resolution of 640 by 200, 640 by 400 non-interlaced and 1008 by 800 on American (NTSC) machines and 640 by 256, 640 by 512 non-interlaced and a 1008 by 1024 on European (PAL) systems. All in up to four shades of grey.

A SOFTWARE patch to Workbench will allow many existing programs to function with the monitor. It works by storing four frames at a time and displaying them all at once. Instead of the usual refresh rate of 60Hz the A2024 refreshes at 15Hz. Software which needs to be modified mainly needs minor tweeks. The Amiga team at Los Gatos has had StarGlider running. The 126 column by 128 line display will make an excellent DTP, spreadsheet or CAD monitor.

The lynchpin of the Amiga's design is its custom chip design. Since the early days of the machine, Commodore and Amiga have been experimenting with improved versions of the chips. The first have now been finalised. The Enhanced Chip Set (ECS) offers a screen resolution of 320 by 512 and 640 by 512 non-interlaced in addition to the current screen modes and requires a new version of Workbench. When they are available, all Amigas will be fitted with ECS as standard.

Existing users will be able to take their Amiga to a designated Commodore service centre and have the new Angus, Denise and Gary chips fitted. Even if you are not going to take advantage of the extra screen modes, the ECS allows the custom chips to access a full megabyte of ram.

To use the new ECS modes you need a special, multisync monitor. Commodore will have its own bisync monitor called the A1950 which supports both old and new screen modes as well as stereo sound. But, like all multi sync monitors, it will not be cheap.

The business community is still stuck in an IBM rut, so as a sop to them Commodore has an AT bridgeboard as an addition to the existing XT bridge. This comes with 640k ram and vastly improved libraries. It runs at 10MHz and can autoboot from a hard drive with the new A2090a controller board.

The announcement of two types of Amiga 2500 is a little misleading. The machines are essentially Amiga 2000s with options installed. The Amiga 2500 AT is an A2000 with the AT bridgeboard, 2090A disc controller, ECS, the A2620 68020 processor, an Amiga 3.5in drive, a 1.2Mb A* type floppy and a 40Mb hard disc.

The Amiga 2500UX is an A2000 with ECS, a 68020, the 2090A controller, Unix and a 100Mb hard disc. There will be an optional tape streamer. All Amiga 2000 owners will be able to upgrade to the 2500 specification – if they can get the bank manager to agree.

NETWORKING is becoming more important, and there are a number of add-in cards for the A2000. Ameristar has a high specification Ethernet card which will allow an Amiga to share a network with mini and mainframe computers. In independent tests this board was found to be the fourth best Ethernet controller in a field of well over 100 products, in competition with companies like Olivetti, Apple and DEC.

Compatibility is very important in networking. You need to use other people's standards if you want to be accepted, so the Appletalk network from Progressive Peripherals which will allow the Amiga to be connected to Macintosh peripherals as well as to Macintoshes, should prove popular with users of this network.

Gail was less forthcoming on plans for 1989, which are rumoured to include an Amiga 3000 with a 68030, and a 68030 card for the Amiga 2000, a possible laser printer and a hard disc for the A500. Commodore has demonstrated a transputer card for the A2000 which runs the same helios as the much trumpeted Atari Abaq.

THE Amiga range is now so broad, with so many good things in prospect, that it will start to appeal to many more people. And Commodore has all the bases covered – all it need do now is capitalise on the ST price hike.

Gail took the opportunity to explain why Commodore is not having problems with the price of ram. She explained that Commodore is the world's biggest buyer of dynamic ram. IBM is a bigger user, but makes its own. Commodore's demand is so great that it places orders up to two years before it needs the ram.

This means that Commodore has at least six, and possibly nine months grace before worrying about the cost of the chips. Most experts believe that the ram shortage will be over by then.

Normally a chip manufacturer would be loath to fulfil an order at a low, fixed price when the same products could be sold for considerably more on the open market. But Commodore buys a lot more than just ram from these manufacturers, who could not afford to lose the sales of things like disc drives if they upset Commodore.

The conference ended with Dr Haleem issuing a set of proposals for a Commodore developers' support programme to encourage developers to get together and share information. An advisory board will be elected at the next developer meeting to be organised by Commodore soon. So if you work for a company which has Amiga products under development you should write to Dr Haleem at Commodore in Maidenhead.

In the



Are you man or mouse? Sage or dullard? Travel through the mists of adventure with Dave Eriksson

AFTER a slow start the Amiga now seems firmly on its way to a stronger position on the market and in our homes. Although manufacturers will always have glowing reports to show us, it is the software available for a computer that spells out the true state of affairs.

A year ago, software for the Amiga was not exactly abundant. Today one of the leading Amiga mail order houses has over 150 games on its lists, of which more than a third are adventures of one kind or another.

Does this mean that the average Amiga owner is a clever thoughtful sort of person who does not have lightning reflexes? Or have the arcade writers not yet caught up with all the Amiga's full capabilities? As about 20 of these adventures are from Infocom, which up until now has produced text-only games, it may be that these were easier to convert.

Whatever the reason, the Amiga is an excellent machine for the adventurer. Some of the best games ever written are there waiting for you to play. There need be no delay, they already exist on disc. Just a phone call away and a few pounds (OK a lot of pounds) well spent and you too could be in an alternative reality of your own choosing.

Adventures are the computer's answer to role playing games (RPGs) such as Dungeons and Dragons by TSR Inc. Unlike most other RPGs, the computer enables one person alone to

e beginning...

play to his heart's content. The computer acts as Games Master and provides all the details that the player may see, hear, smell, touch or taste on the journey throughout the adventure.

They generally allow the player considerable freedom of action within the constraints of the plot and logic of the adventure. You may travel north, south, east or west and look at what is there. You will probably find characters and objects that will help you to solve various puzzles or quests, and having finally reached a solution, the winner's laurels are yours alone.

The majority of earlier adventures were set in fantasy worlds where swords and sorcery were the main theme. Nowadays you can also play detective and solve a murder case, solve a mystery in outer space or even play Arthur Dent, striving to unravel the riddle of the Universe in The Hitchhiker's Guide to the Galaxy.

Apart from the obvious differences of plot, computer adventure games can be split into two distinct groups, which I would label active and passive. The latter would include the normal text adventure (with or without graphics), where your aim is to solve a set of puzzles. The solution to each problem, helps to add to your knowledge.

The active type of adventure derives from a very popular type of game from the early days of the home computer. Here the adventurer roamed around killing monsters and finding their treasures. In addition to gaining knowledge, the adventurer's character gains combat experience. The basic characteristics of the characters – strength, dexterity, wisdom, intelligence or luck may also be improved, the balance of these or similar attributes determining whether they make a better fighter, thief, cleric or magic user.

Of the 50 or so adventures now available on the Amiga, about 10 are of the active variety, with three or four others imminent. Twenty or so are text only and the rest graphic adventures in a variety of different forms.

Three classic adventures in the active class are The Bard's Tale from Electronic Arts, Exodus Ultima III from Origin Systems, and Phantasie III from Strategic Simulations. In this country the first two have been around for some time (on other computers), and in my opinion all three give us something by which adventures of this type may be judged.

THE plot behind Bard's Tale I – BT II should be here any time now – is simplistic. Mangar the Dark has taken over the town of Skara Brae and locked it away from the rest of the world by a spell of Eternal Winter. You and your unproven companions must free the city of his evil presence.

With Mangar's coming, the hosts of evil poured into town. Even in broad daylight it is not safe to walk the streets. To tackle Mangar you must first train your group in combat to increase their level of experience. By exploring various unpleasant areas of the city, learn of ways to advance your cause.

Your aim is to defeat the evil Mangar in his lair in the southwest corner of Skara Brae. To do so it is necessary to visit all the other special areas to find clues and objects with which to defeat him.

For the final confrontation with Mangar you will need to be truly seasoned veterans. This means shedding the blood of literally thousands of evil creatures – may your sword remain sharp and your magic users healthy.

Getting started may be a little traumatic for those Amiga users who have only used their machine for playing games where you put in the disc and the game auto-runs. For The Bard's Tale you have to make up a character disc using the facilities supplied on your Workbench disc. This should be fairly straightforward – except that the instructions are not quite correct.

First you must initialise a new disc. As you are probably aware, our clever clogs Amiga will name such a disc "Empty". Before you type in the new disc name "BARDS TALE CHARACTER DISK" (note the American spelling of disc), you must delete the previous name of "Empty".

The small (but vital) error in the instructions occurs a few lines down when you enter Copy from RAM:#? to "BARDS TALE CHARACTER DISK:". The instructions show the ▶

The future is in your hands

With a new adventure column in a new magazine for a relatively new computer, it is difficult to be certain what exactly YOU want to read. Let me know what your adventuring interests are and I will try to oblige.

Next month I'll look at another classic active game together with something to whet the appetites of our more passive brethren.

New adventures for the Amiga are coming out all the time, although many are still conversions of existing games. Fortunately for us, adventures stand the test of time more than any other type of game. There are strong rumours that Infocom is not proposing to continue with a number of its titles for the Amiga. Several text-only classics will then no longer be available.

Some of these are now on sale for as little as £12 and are well worth adding to your collection.

words within double quotes in upper and lower case, they MUST all be in upper case as shown here.

Six characters are supplied on the disc; you may use these or create your own. If you choose to create one you will first be asked what race the character is to be. There is a choice from seven: Human, Elf, Dwarf, Hobbit, Half-Elf, Half-Orc and Gnome. You will then be given a set of numbers for the character's attributes – strength, dexterity, intelligence, constitution and luck. These are randomly determined and if you do not like what you are given you may choose to re-roll another set.

Next you must decide what class of character you are creating. There are 10 classes, of which only the first eight are available to novice adventurers: Warrior, Paladin, Rogue, Hunter, Monk, Bard, Conjurer, Magician, Sorcerer and Wizard. Each class has different abilities and as you may only take out six adventurers into Skara Brae, think carefully about your choice.

Each of those initial attributes is important, but more so in relation to the proposed class: Strength to a fighting man, intelligence to a magic user, dexterity, constitution and luck to all of them.

Most of the action takes place in the narrow streets, passage ways and buildings of Skara Brae. Because of this only the first three members of your team can engage the enemy in a fight. The other three can still

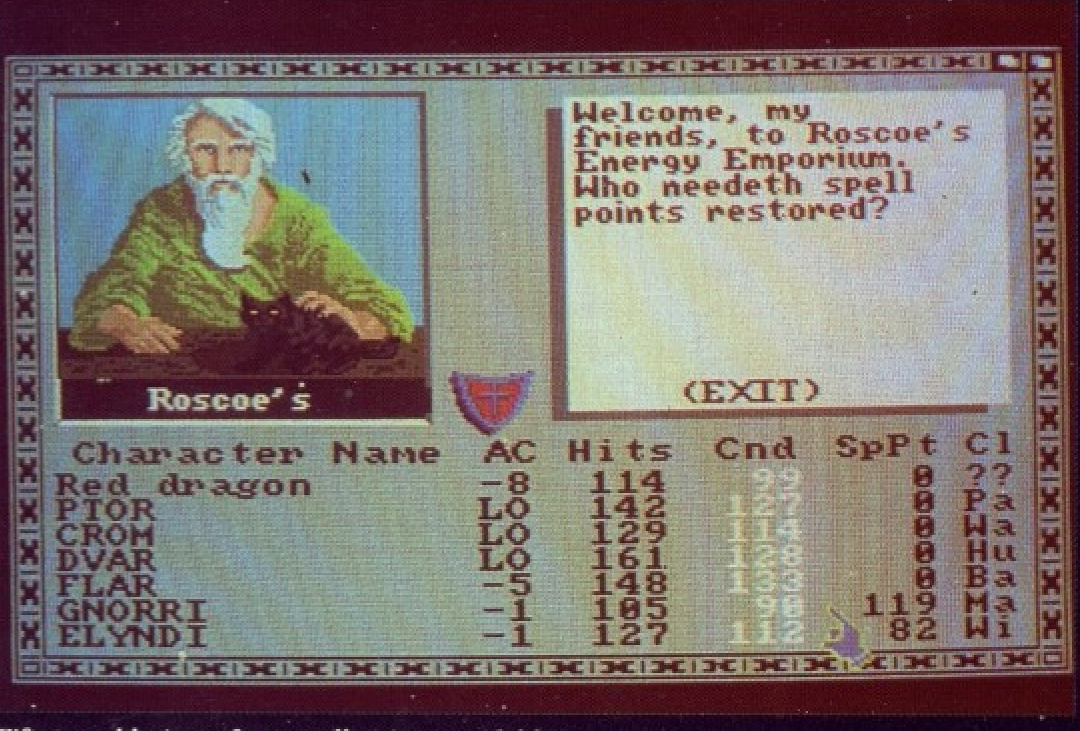


Skara Brae is peaceful... at the moment

support them or attack by using magic. Spells are vital to your success. Higher level magic users can cast spells that will affect whole groups of creatures. If you are faced by hundreds of foes – it can happen – this is the only way to get out alive.

The Bard is a strange character, having both fighting ability and access to magic via playing an instrument. Singing makes him thirsty and between drinks he can only sing as many songs as he has levels of experience. This leaves him a pretty weak magic user in the early stages, although his ability to use magic instruments can make him worthwhile – a fire horn can be used to simulate dragon's breath.

Your fighters must have a strong constitution to withstand heavy punishment. They must also have high dexterity so that they can get their blows in as rapidly as possible. There are several types of fighters to choose from. All will serve you well, and their special abilities will improve rapidly as their levels rise. Rogues may be useful, but their ability to find and disarm traps may be duplicated by higher level magic users.



Fifteen gold pieces for a spell point – useful later

YOU always start from the Adventurer's Guild in Main Street and on leaving are facing north. The graphics of the houses along the road are good, but the house designs are often similar so it is easy to lose your way. Draw maps from the beginning and you will soon know your way around the back streets as though you were born there.

Killing creatures that attack you will add to your expérience and your purse. As your experience grows you can visit the Review Board in Trumpet Street, and if your experience is high enough you will gain a level. This must be one of your main aims, as an increase in level will give you greater hit and spell points and add to one of your main attributes.

A larger number of hit points will enable you to take more damage and

spell points determine the number of spells that may be cast. Loss of hit points in a fight can be restored by visiting a temple – in exchange for some of your hard won gold. Spell points slowly restore as time passes, although if you can find Roscoe's Energy Emporium you can buy them back – again, for more gold.

The initial stages of Bard's Tale are not easy. Each character is given on average 150 gold pieces and you must walk up the road a few paces to Garth's Equipment Shoppe and buy them weapons and armour. Needless to say, you can only get some fairly rudimentary items with your low budget. Each item of armour will reduce your armour class, which in turn reduces the damage sustained in battle.

From the start, money is everything. You need it to buy better equipment, heal your wounds and as payment to the Review Board for your magic users to learn more spells. Items found on your foes may be sold at Garth's, but it is a touch and go business.

You can, of course, cheat a little by creating additional members, pooling



The guardian of the castle

their money with one and then deleting the extra characters. Many adventurers have found this is the only way to keep going.

Around the town streets and buildings you will be attacked by up to eight creatures. As you delve into the sewers, catacombs and castle, the number of assailants will increase. It becomes more and more necessary to have accomplished magic users at your back to cast high level spells. If possible, aim to take out any opposing magic users first, as they can cause expensive damage to your team.

A magic user can start out as Conjurer or Magician, each with a different range of spells. As they progress, it is possible for them to change their class to Sorcerer or Wizard. If a magic user reaches the highest level in each class, he is an Arch Mage. These are much prized members of your team – aim to get at least one.

After you have gained a level or three, you can attempt exploring the sewers under the Scarlet Bard Tavern. Ask the barman for wine and keep your fingers crossed. Each level in these special areas is mapped on a 22 x 22 grid, but be warned – they scroll round so that if you kept going east you would come back to where you started.

MAP these areas carefully. You must be certain that you have visited all possible passages. Messages written on the walls or spoken by magic mouths are all vital to your future progress. Once you can walk all the levels of the sewers with impunity you can consider entering the catacombs beneath the Mad God's temple. To do so you will need to know the password found in the sewers.

After the catacombs comes the castle. This is guarded by a dragon and only if you are a strong enough party will you even get one step inside. From there keep looking, the clues must be fought for, but the final reward is worth it.

If you decide to try out another class of character it may be worth waiting until your present characters, especially magic users, are at a fairly high level. It is then possible to fight battles that will give each member tens of thousands of experience points. It is then a simple matter to raise the useful level of a new character very rapidly indeed.

Commands may be given via the keyboard or mouse. I found that my mouse tended occasionally to suffer from some bounce and one click ended up as two. This is highly embarrassing when selling something – I ended up selling the wrong thing. It's worse still, in trying to delete an unwanted character: I clicked on D to delete and the character shown on the next menu directly beneath the pointer was deleted. Ouch, he was my high level Bard.

Although you only SAVE your characters when you Leave Game at the Adventurer's Guild, Delete is permanent at any time. The moral here is to make a back-up character disc at fairly regular intervals. This takes time out from the game, but at least you know that a character will not have to start from scratch if something ghastly happens to him.

The graphics are good, with a certain amount of animation thrown in for good measure. Look for the fly buzzing around the nose of the stuffed (?) dragon in the Scarlet Bard. General control of the game is from a series of menus, easy enough to follow but it is well worth using the characters supplied with the game until you are familiar with their use. It would be a pity to lose your own because you were still learning to handle the basics.

If you get really stuck, Electronic Arts Customer Service Department is happy to help on 0753 46465. It also provides a readable clue book, complete with all maps, for £5.

REPORT CARD

Bards Tale TARJAN
Electronic Arts 0753 49040
£24.95

STORYLINE
Limited plot, but the strength is in the action and the role playing elements.

AURA
Sweaty palms. You need a strong heart to survive and defeat the Mangar.

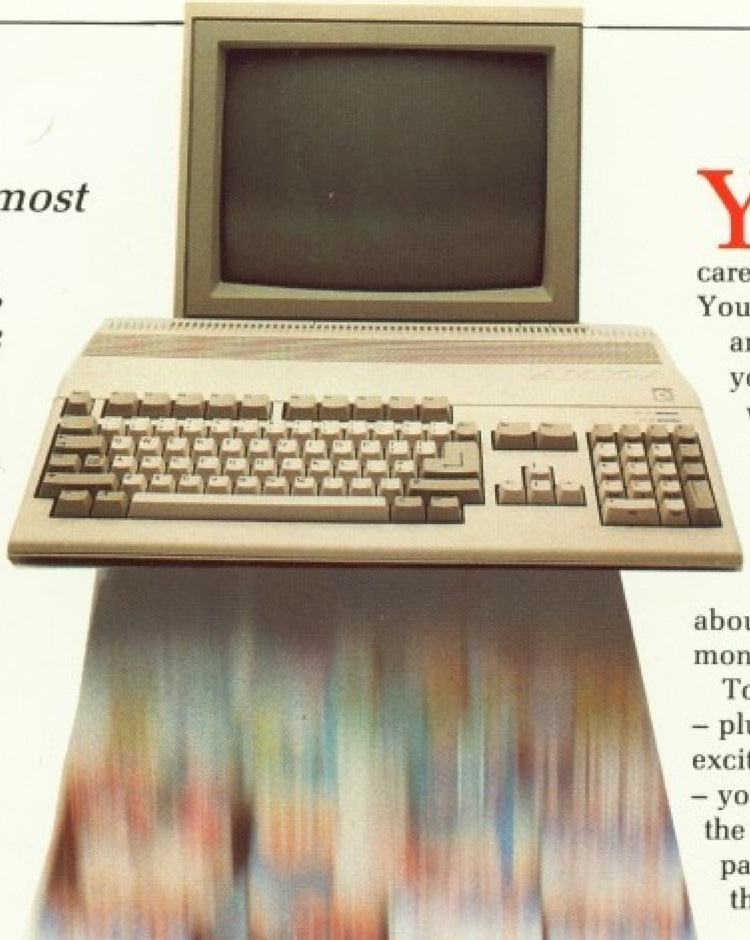
STAYING POWER
Weeks of challenge mapping, exploring and gaining levels. Gripping stuff.

GAMEPLAY
Well thought out, so that even the minor delays do not spoil the flow of play.

VALUE
Hours of adventure for your money, making this EA's best Amiga buy by far.

DIFFICULTY
Not easy to start with. Stay near temples and don't get too ambitious.

OVERALL *84%*
Slightly more puzzles would enhance the appeal of this adventure.



WIN! *Britain's most desirable computer, the Amiga 500, in this exciting, easy to enter launch competition.*

There is also lots and lots of software to be won – bringing the total value of the prizes to well over £5,000. With more than 200 prizes you stand a good chance of winning. So don't delay.

YOU'LL need to study your copy of *Amiga Computing* very carefully to win one of our prizes. Your task: To find hidden lines from articles in this issue. What we want you to do is identify the line and write its page number in the box on the entry form.

Commodore's star prize is an A500. If you haven't got an Amiga yet you are no doubt feeling deprived after reading about the fantastic products in this month's issue.

To win the A500 from Commodore – plus a copy of Grand Slam's exciting African Adventure Terramex – you need to find ALL the lines in the individual categories, add up the page numbers and write the sum in the total box.

BIG £5,000+ COMPETITION



1 Superior Software has a special place in every BBC Micro owner's heart. Now it's set on the path of winning over the Amiga community – by offering 25 copies of Bonecruncher. To win a copy, and send Bono on his soap-sudding way find the line:

"James, who wrote the film Who Dares Wins"

2 Tynesoft has enjoyed many chart successes, including Winter Olympiad 88. Now available on the Amiga it's your chance to rival Eddie the Eagle. To win one of 25 copies find the line:

"Fail to bare the soul of the machine and you will run into problems."

3 Psygnosis was one of the first 16 bit only software houses. Its amazing graphics have wowed gamesters for a few years now. Obliterator, the latest, is certainly the greatest. You can win one of the 20 copies being given away by finding the line:

"I particularly like it for writing vitriolic letters to restaurants."

4 Kuma is one of the oldest micro companies in Britain. Much respected purveyor of excellent software, there isn't much about the 68000 that Kuma doesn't know. It is offering six prizes. To win one of two copies of the K-Gadget utility, one of two copies of K-Spread spreadsheet worth £49.95 to keep your accounts in order, and one of two copies of the well established K-Seka assembler worth £79.95 – a total prize worth over £300 – find the line:

"American teens have favourite words."

5 Anco has a wide range of fun, fun, fun games software, including Battle Through Time. To win one of 20 copies find the line:

"You can also set a constant entry for each field."

6 Also from Anco is Microbase. Win one of 10 copies of this wonderful program by finding the line:

"An Amiga is a pretty stiff piece of plastic with moving keys".

7 Microdeal has such a wide range of Amiga software that it had a tough time deciding which games to give. Deciding on one was just too difficult so Microdeal put together five packs of its top five games – Goldrunner, Slaygon, Insanity Flight, Time Bandit and Karate Kid, a prize package which is worth nearly £120. You might be one of the lucky five if you can find the line:

"This thing handled like a truck but went like Concorde."

8 Novagen is a small company which stands tall thanks to the exceptional programming talents of Paul Woakes. It has offered 25 prizes consisting of one copy each of the frighteningly fast Encounter and the brain-taxing World of Targ in the Mercenary compendium, and cleverly coded Backlash. Superb prizes, and all you have to do to stand a chance of winning is to find the line:

"Oodles of setup and troubleshooting information – hurrah".

9 Robtek is the home of Diamond Games. It has some sparkling software and from this it has selected 20 copies of Starways for you to decorate your disc drive. To win you've got to find the line:

"There's a cut out and lose quick reference card"

10 US Gold from Birmingham is probably the UK's biggest games software house, a veritable IBM of the industry with lots of goodies in the pipeline. We should see Jinks, Side Arms and Bionic Commandos very soon, all worth waiting for. Gold dug into its goodie pile and came up with copies of Hardball and Rolling Thunder for each of our 10 sharp-eyed winners who find the line:

"Both Amy and Archie could compete with Paula".

11 Ocean has a growing reputation for well programmed, solid games thanks to its large in-house team and professional approach to computer games. There are 20 copies of its evolution game, ECO, up for grabs. Just find the line:

"The result is usually Sixties pop art".

Prizes will go to the first correct entries to be pulled out of the hat.

Entry form

Don't worry if you can't find all the references. Just put the page numbers for those you can find in the boxes below and make sure your entry reaches us by June 30.

Line	Page
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Total	

Name ____________

Address ____________

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Postcode ____________

Telephone ____________

Rules:

1. No member of the staff of Database Publications, or any of the software companies associated with this competition, can enter.
2. The editor's decision is final.
3. You may photocopy the entry form to avoid having to cut up the magazine, but anyone submitting more than one copy of a form will have all entries disqualified.
4. Entries should be sent to:
   Amiga Computing Competition,
   North House, 78-84 Ongar Road,
   Brentwood, Essex, CM15 9BG

WordPerfect

– software the Amiga has been waiting for

Simon Rockman no longer needs to give houseroom to an IBM PC



WE all know that the Amiga is much better than an IBM PC. Unfortunately many of the people who buy large quantities of computers do not. These are the corporations which buy IBMs by the lorry load. Commodore sells the 2000 on the strength of its IBM PC compatibility, and given the blinkered view of the customers Commodore is probably right.

What the Amiga needs is more software which is as good as that on the IBM. And since the Amiga is a better computer, with a better operating system, there is no reason why the Amiga version should not have more bells and whistles than the PC.

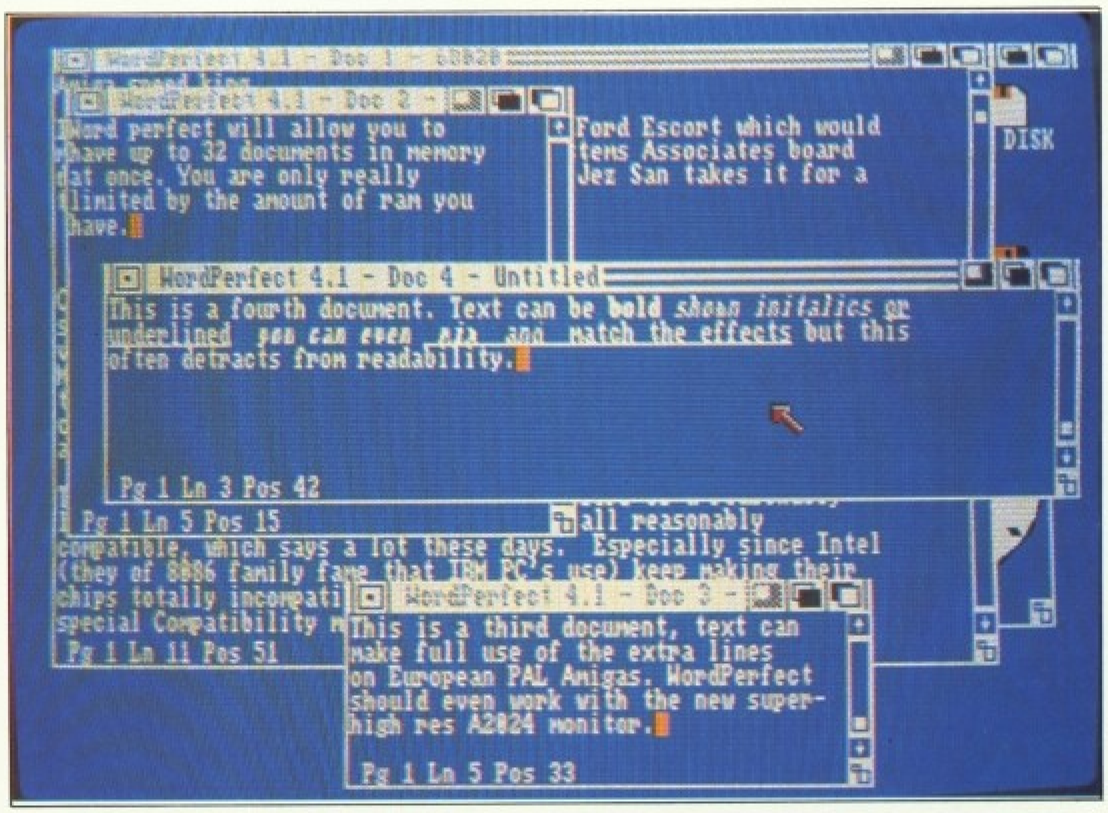
This is an ideal scenario. What is amazing is that someone has actually bothered to do it. WordPerfect is not just a popular PC program, it is the MOST popular PC program. Forget WordStar, WordPerfect is topping the PC sales charts despite a £500 price tag. To be fair the PC version can be bought discounted to around £300 but that still makes the Amiga version, which costs £199 plus VAT look like a bargain.

So what has made WordPerfect so popular? For a start it is fast. Moving from the top of a document to the bottom only necessitates a short pause, the search and replace are pretty damn quick and block handling virtually instant.

WordPerfect has the best help options I've seen on any program. Just press the Amiga Help key followed by the initial letter of the topic you want help with and the necessary keystrokes are detailed. Type Help followed by those keystrokes and you will get a full page of text on the function.

THIS cooperation from the software is in stark contrast to the initial display. Until you press the Help key there are no on-screen prompts, rulers or menus, just a line at the bottom of the screen detailing the document name and cursor position and the standard Amigaesque bar along the top.

The keystrokes are far from mnemonic. Control F5 for mark text in preference to WordStar's control KB, but you get a keyboard overlay for the function keys. In fact you get two overlays. One for the A500 or A1000 and one for the A2000. You soon learn the major keystrokes.



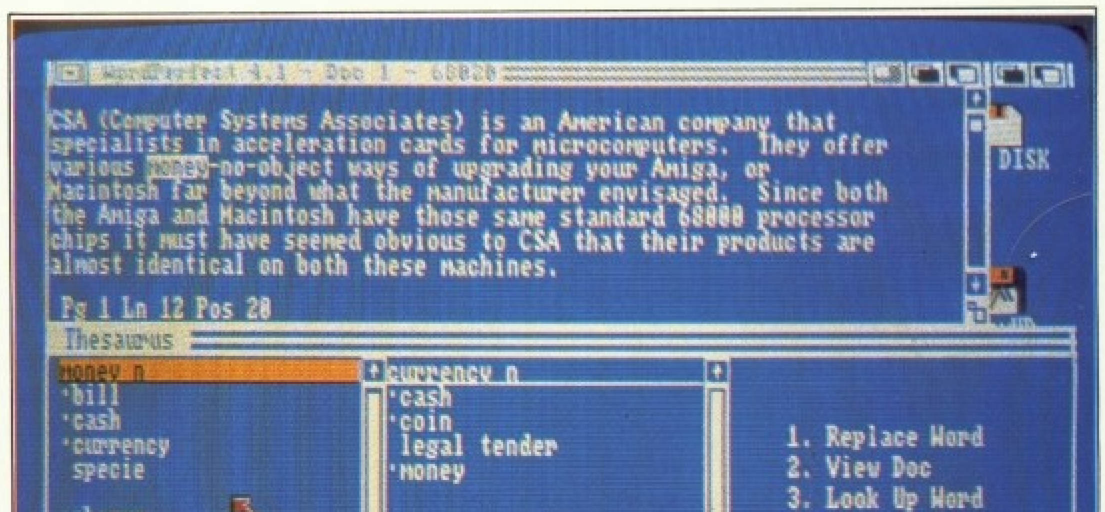
Four WordPerfect documents at once

Many expensive word processors offer spelling checkers, but only a few include a thesaurus. The ability to look up a synonym is a godsend for anyone who wants to add variety to texts. I particularly like it for writing vitriolic letters to restaurants where the service is lousy.

You can add and delete words within the spelling checker's vocabulary, but the thesaurus is fixed. It has a much smaller range than the paper version, and I often have to resort to the paperback on the shelf.

One bugbear of the PC version is that the thesaurus covers most of the page when in use. The Amiga version is window-driven, so you can move text and allocate space in a way you find more comfortable. This is not a gimmick; it makes the software more pleasant to use.

The window approach is extended to the full control of the software. You don't have to use a mouse with WordPerfect but on an Amiga it ▶



Using the thesaurus

◀ seems the natural thing to do.

The software defaults to the standard Amiga screen, and so omits the bottom 50 pixel lines because these do not appear on an American Amiga. The software is well enough written so that you can drag the window down and use the whole screen. This adds about four lines of text to the screen.

When Commodore's DTP monitor, the A2024 Headly, becomes available you will be able to fit huge amounts of text on the screen.

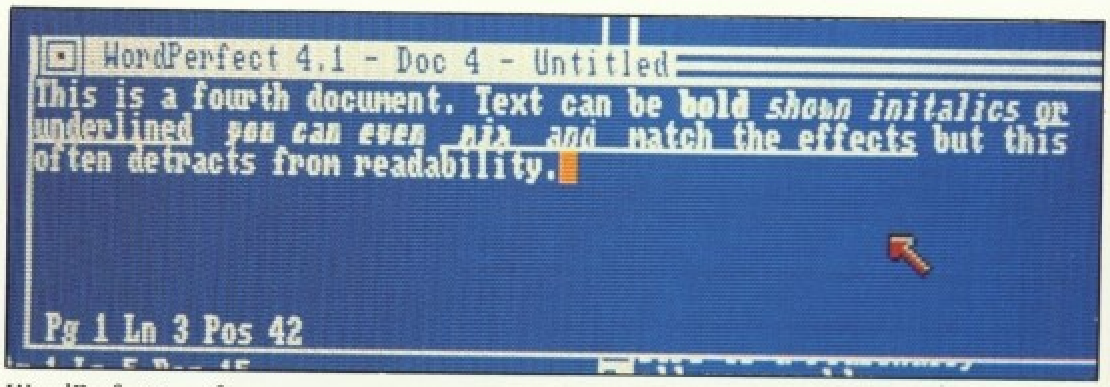
USING the mouse for marking blocks is much quicker than a load of cursoring around. There are full mail merge facilities, headers, footers and even mathematical calculation. The ability to define macros saves a good deal of typing, particularly when the work is repetitive. I would much rather press two keys than have to enter my address at the start of every letter. In this way WordPerfect is a bit like LocoScript on the Amstrad PCW, storing the standard phrases on disc.

Amiga discs are slow. Not even the mighty WordPerfect Corporation can do much about that. This means that some of the features which have spoilt me on my hard disc PC have become a pain, spell checking and timed backups in particular.

Amiga developers are given guidelines on how to write a user-interface based on =RJ= Mical's (sic) intuition. Software uses requestors and gadgets. WordPerfect has compromised between the official way of doing things and the IBM way. Wildcards on an IBM use an asterisk, on the Amiga they do not. Yet the Amiga file manager prompts with a df1:*.

Officially you need two drives to use WordPerfect. I found the second drive handy – essential if you want to use the speller or thesaurus. However for simple text editing you could get by with one. But no one is going to shell out £228 for a simple text editor. The Amiga comes with Ed after all; the price is steep but the software is very, very good. In America the software is offered to registered students at $99, so it might be worth looking up distant relations.

The block handling is excellent. You can define a block as a vertical column, which is great for updating price lists. Layout commands will work on whole blocks if one is defined. This makes centering an address simple. You type the text, mark it in a block, and then press center. If you prefer to have the text flush against the right hand column you have a single keypress to do that.



WordPerfect typefaces

When you have a block defined some keys change their meaning. The switch command usually flips you between up to 32 documents, useful if you want to read one document and abstract bits for another. But under block mode it will switch the case. An example of WordPerfect's brilliance is that here it understands full stops, so an area which has lots of upper case letters can be flipped and the beginning of sentences remain capitalised.

SOME word processing features really sort the men from the boys. These are the things which are difficult to program and usually involve shaping the text. One such feature is columned text. A page like this one in a magazine does not have the text running the whole way across. It is divided into two or more columns. This is done for readability, about 39 characters across being the maximum. Text runs down one column, and then down the next.

WordPerfect has spoiled me. I now find writing with anything else slows me down. I know that I don't stretch the software, I make little use of the mathematical commands and rarely use mail merging. I've not yet done anything more than experiment with footnotes, but then if I found a word processor which only did what I wanted I'd grow out of it.

Complaints? I could do with extra ram to make more use of the printer drivers. Having the word processor and the spell checker on different discs means that you have to swap discs to keep a document on a separate data disc.

But worst of all it is too expensive. £228 is too much for the home user; you won't get many A500 owners buying WordPerfect. There are cut down versions for the PC called Personal WordPerfect and WordPerfect Junior and it would be good to see those converted, along with a radical price cut.

I'm pleased to see this software on the Amiga. It adds credibility to the 2000's business machine mantle. It also removes the main reason for using an IBM PC.

REPORT CARD

WordPerfect
Sentinel Software, 0932 21164
£228.85

USEFULNESS
Everyone can use a word processor, and WordPerfect has nearly all the features everyone could want.

EASE OF USE
Takes a bit of getting into but then it is love at the keyboard.

INTUITION
Doesn't follow Commodore guidelines to the letter but it's close. Works well.

SPEED
WordPerfect's greatest asset, held up by floppy drives.

VALUE
Too expensive for the average A500 owner. A price cut would help.

OVERALL 75%

Good software, well written but at an elitist price.


Photo: Tony Sleep

The Argonauts from left to right: Peter Warnes, Paul Gomm, Alister Perrot, Tim Watson, Jez San and Richard Clucas

J. San and the Argonauts

Starglider has made Argonaut famous. Simon Rockman visited the company to find that it's not resting on its laurels

JEREMY San – Jez to all who know him – *is* Argonaut software. J. San and the Argonauts. The company now consists of seven programmers and a number of freelancers, but it wasn't always like that.

Jez started with a Tandy TRS-80 when he was 13, in those days 8k was a lot of ram. He can't remember what his first Basic program was but everyone in his class at JFS school knew about his machine code joystick reading routine – whether they wanted to or not.

He switched allegiance to the BBC Micro, picking up pocket money working for a local Beeb dealer and working as a freelancer for Acornsoft. Several Acorn games were protected with Argonaut disc protection routines.

Many parents may wish that their children would do something educational with their spare time, like programming, but Jez programmed in school time and left before A levels to join Silversoft, one of the first successful software houses.

There he worked on two projects. Labdis – a labelling disassembler for the BBC Micro. This was launched a couple of times but was never actually produced. The other project was a game based on the Tac-Scan arcade game. "I hadn't even seen the game", says Jez, "My boss at Silversoft – Dougie Bern – had seen it once in an arcade and I had to work from his description". Tac Scan was never finished.

IT was while working at Silversoft that the Sinclair QL was launched. Jez was among the very first people to order this 68008 based wonder machine. He co-wrote a book, Quantum Theory, on the machine with Fouad Katan and someone called Simon Rockman. Despite being a very, very good book (tongue firmly in cheek) the sales were no great shakes.

It was guided through the mysterious seas of publishing by Jacqui Lyons, who now represents Argonaut. She is an agent who finds programmers or programming teams for software publishers and work for programmers. By applying the rules learnt in the book world Jacqui makes sure that contracts contain provision for things like film rights and makes sure that copyright is correctly assigned. She ensures that programmers are not exploited and they keep their noses to the monitor.

Quantum Theory was published by Century Communications (now Century Hutchinson) a very large book publisher which wanted to move into software publishing. It was for them that Jez and Fouad wrote a scrolling shoot-'em-up called Skyline Attack with graphics by Danny Emmett, who is now an Argonaut programmer.

WHILE Jez disliked the 64 he could see that the Beeb had a limited future. He and Fouad produced the Comm Zromm for the BBC Micro and Demon modem. With his understanding of the two machines Jez acted as a coordinator for Commodore 64 Elite, helping with the conversion. He'd heard of the Amiga. I'd read about it in the American magazine Compute! and can remember reading the specifications out, the conversation interrupted by the dark patches between streetlights as we drove along in his Datsun Cherry. We calculated that a screen resolution of 320 by 200 in 4,096 colours was impossible, the machine would be too ram-hungry. We'd reckoned without HAM.

By the summer of 1985 Jez could see that the future lay with the 68000. He was commissioned by Firebird to produce a game in which you flew a spaceship from planet to planet without any power. The game was to be called Starglider. Jez rented an Apple Macintosh and started work on line drawing routines.

Two new machines loomed on the horizon, the Atari ST and the Commodore Amiga. Commodore held a conference for software houses. Jez flew over to see the wonder machine.

"It was wonderful – everyone was so excited. The case was a little dull, but the custom chips could do incredible things. The operating system was a programmers dream – they thought of everything", said Jez, ecstatic. "Things which had previously only been done in software could now be handled by hardware: Hardware fill, and line drawing, sound described by the waveform, multi-tasking".

Amiga seems advanced today; it was an amazing look into the future then. The next machine was codenamed Ranger and offered a 68020, hard disc and the chips would be able to magnify sprites in hardware. Ranger became an unfulfilled wish. It was a move up ►



Chris Humphries uses the In Circuit Emulation to trap a bug in the sound routines

Photo: Emmett and Richman

Photo: Tony Sleep

market and Commodore, with a much more commercial eye than that of the designers, elected to cut the price by introducing the A500 (codenamed B52) and to launch a more expandable machine, the A2000.

Jez was the first person in the UK to have an Amiga, and that includes Commodore UK. It is the same A1000 which he uses now. With a converter which produces an American voltage and a number of chip upgrades, it runs all day every day. Additions include a couple of megabytes of ram and a large hard disc.

Unfortunately even the first Amiga landed after the first Ataris. Starglider was first shown at the PCW show in 1985. It was just a city of towers and a landscape running on an ST, but that was the start of the game we know and love.

Firebird split into two sections with Tony Rainbird taking the 16 bit projects over to Rainbird. The company quote 18 months for taking Starglider from the arrival of the machines to the finished project, but the crowd at Argonaut know that it was over two years before the baby was born.

Starglider was a huge success. Being late, it had caught the market at the perfect time. There was nothing to rival it. Thousands of Amiga owners took on the role of Jaysan, the heroic Noviean as he battled against the evil Hermann Kruud and the Egrons.

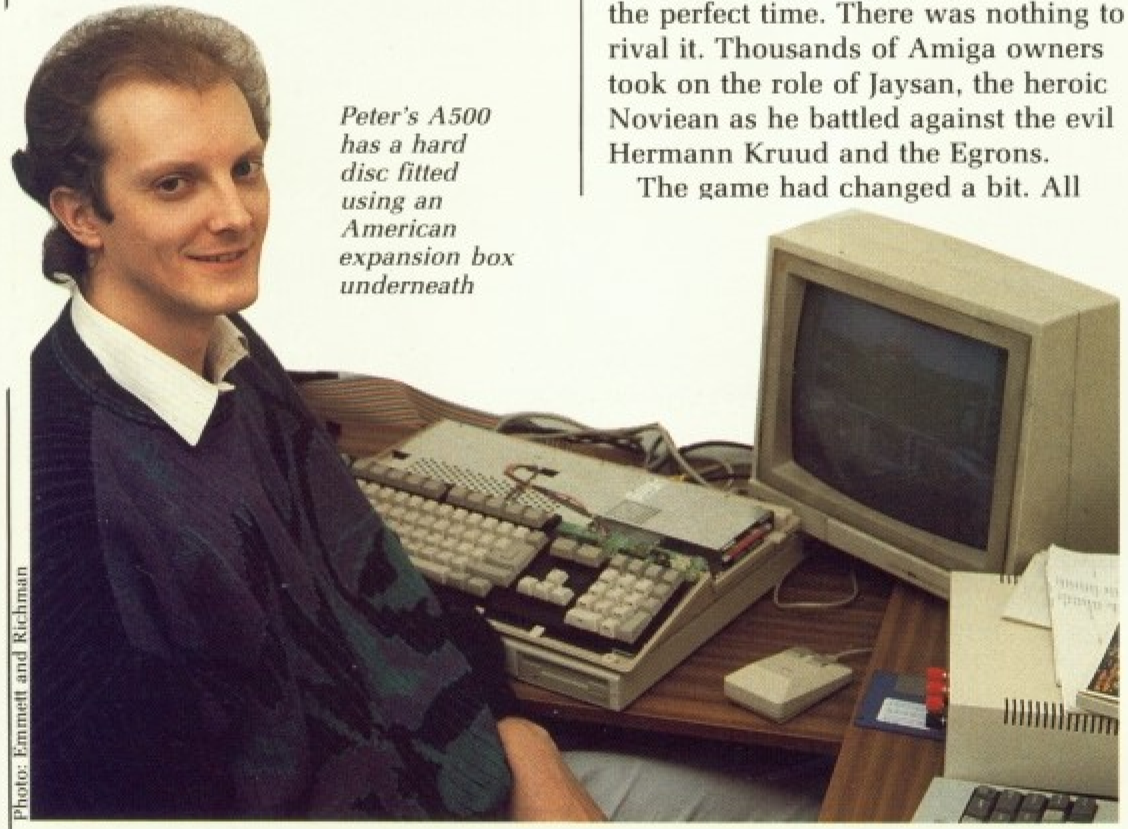
The game had changed a bit. All the action took place on Novenia. But that action is fast and furious. Jez wrote and rewrote the graphics routines many times. Obsessed with frame rate, he studied the 3D maths, tweaked and recoded. It is this work which has made Starglider so playable.

Jez and James Follet discussed the plot and tried to make sure that the novella James was writing to go in with the game would capture the atmosphere. James, who wrote the film Who Dares Wins and Earthsearch, contributed a number of ideas to the game. Some – like the powerlines – made it to the game, others – like a fog descending – were rejected.

It was with the profits of Starglider – in excess of 100,000 sold worldwide – that Jez enlisted the help of the crew at Argonaut. The extra manpower has allowed Argonaut to diversify. It took on contract work and wrote hard disc driving routines for Cumana's Atari ST drive.

If an army marches on its stomach, a software house marches on its hardware. Argonaut has a couple of boring IBM PCs, some equally boring STs, a superfast 80386-based PC with a laser printer, and loads of Amigas.

There are A1000s, A2000s, an A500, and even an A500 connected to an A2000. Other machines include an Acorn Risc machine in prototype casing and an Atari Abaq transputer machine. Perhaps most interesting is the 68000 in-circuit emulator. This box replaces the central processor of



Peter's A500 has a hard disc fitted using an American expansion box underneath

Photo: Emmett and Richman

The programming team

JEZ SAN:
Managing Director at 21. In addition to writing and designing ultra-fast graphics and maths routines, Jez handles all the negotiations with outside companies and keeps things running smoothly. Jez keeps an eye on the market and tests all rival flight simulators.

RICHARD CLUCAS:
As the senior programmer Richard coordinates projects. He makes sure that subroutines written by different programmers will work together within the finished program. This task involves sharing out the ram, restricting the amount each programmer is allowed to use.

DANNY EMMETT:
Is part time. A physics student at Imperial College he designed the alien graphics and the animation formulae.

PAUL GOMM:
Writes the fundamental graphics routines. These are the building blocks for the whole game. His code has to run as fast as possible to make the game playable.

CHRIS HUMPHRIES:
An Atari 800 expert Chris understands the Amiga's custom chips. His forte is writing sound routines. He is responsible for the EA game artwork, and the off-planet sequences in Starglider II.

PETER WARNES:
Is the EA game strategy and gameplay man. In addition to writing flight simulation and 3D maths routines, he is up to date with weapons technology and responsible for making sure the game is both accurate and playable.

TIM WATSON:
Is the flight dynamic expert. A spaceship may not have to mimic a real plane but you can't go around rewriting Newtonian laws – even on Novenia. He is an IBM PC programmer.

ALISTER PERROT:
Looks after the strategy element within Starglider II. A brilliantly programmed game will flop if it is boring. Al has ensured that this isn't the case.

the Amiga with another computer. It can analyse what the machine is doing, which areas of memory are being written to, and display the contents of registers while the program is running in real time. It can even show what the program was doing during and after a crash. "The emulator is an invaluable debugging tool. It cost £8,000, so we rented it at first, but we found it made bug hunting so easy we decided to buy it", says Jez.

THE men and machines are now working on two major projects, Starglider II for Rainbird and a secret, unnamed combat flight simulator for Electronic Arts.

On a planet in a solar system not far from Novenia, the Egrons, still licking their wounds after doing battle with Jaysan's AGAV, have retreated there. They have enslaved the population and regrouped for another attack on Novenia. The Egron's not-so-secret weapon is a cannon which can blast Novenia from its base.

Jaysan has been sent in a new ship to destroy the cannon. The craft was designed for police patrol work, so while it is capable of using a number of weapons and is very nippy it is not too good for interplanetary travel. To this end it has been stripped of armaments and filled with fuel so that it can cope with the voyage.

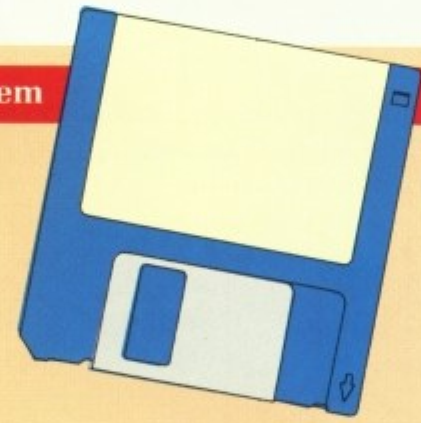
Trying to take on a heavily defended Egron cannon without even a simple laser is a mite foolish. Some of the other planets in the solar system are less heavily defended. You need to enlist the help of rebel forces to arm your craft.

You'll be low on fuel. There are three ways of topping up – docking with a refuelling station, drawing radiated power from fuel lines – as in Starglider I – and by scooping energy from a star, which is hazardous but lucrative.

TO arm the craft you have to reach rebel centres. Those which haven't been overrun by Egrons are often the other side of pirate infested spacelanes. You have to battle your way between planets to reach the resources you need.

When you land on a planet you have to get to different bases. This ►

ADLS – Argonaut Disc Loading System



The lack of a standard disc size for the IBM PC has led to many manufacturers putting both 3.5in and 5.25in discs in the same box. In a meeting with Jacqui Lyons and Jez, Rainbird boss, Paul Hibbard, suggested that they put both ST and Amiga discs into the same box. Jez came up with the idea that both games could be put on the same disc.

Clever routines were needed to fool the machines into reading different parts of the disc. "Harder on the ST because the disc controller is dumb". Both versions will use common data files but there will be marked differences when the games are run.

On an ST some routines will be slightly faster due to the higher clock speed. But this will be balanced by the speed improvements which result from using the blitter and sprites. Amiga sound will be very much better, and the colours "that little bit nicer because of the wider palette," according to Chris. The combined format means that more shops will be willing to stock the software and that the price will be the same for both machines. It will confuse the chart no end.



The blocks are your missiles



New aliens include the bouncing ball

◄

can take a while, and the Egron cannon must be stopped. Hallucinogenic fields make normal spacecraft seem strange in an Alice through the looking glass kind of way.

To dodge these perils you can fly under the surface of some planets through narrow tunnels, taking a short cut in the process. The tunnels turn and twist, divide into twos and threes. You will need to keep your wits about you to avoid the sides.

There are further hazards: Iris shaped doors will shut on you unless you time your movements. Barriers need to be blasted and tunnel aliens avoided.

Starglider II is Jaysan's toughest assignment, with very much more to do than just fly and blast. The sound is excellent: Not only the title music by Dave Lowe, but the clever spot effects. Each alien makes its own noise which is doppler shifted as you approach – the first time this has been done in a computer game, adding a dimension to playing Starglider II which makes the game feel more real.



A tunnel entrance on a patchwork planet

The programming team has followed Jez's lead in being obsessed with frame rate. The solid graphics have not been allowed to impinge on the gameplay. The new aliens are more complicated and better animated than those in Starglider I. Towers, nicknamed Telcom towers, have multifaceted tops which rotate.

When I visited Argonaut they were experimenting with a patchwork landscape, weighing up the advantages of a better sensation of movement against the reduction in speed. With one programmer arguing for smaller patches which would be slower but look better, one for no patches and Jez wanting big patches. It will be interesting to see what happens.



Sounds Sensational

Christopher Humphries explains why the Amiga sound chips leave other computers dumbfounded

THANKS to the Paula sound chip, the Commodore Amiga has the most powerful sound synthesis hardware of any micro available today. No 8 bit machine of my acquaintance was as powerful as this. The Amiga's nearest rival has to be the Acorn Archimedes, as Atari fell out of the running when it failed to put the much talked about Amy chip in the ST.

Both Amy and Archie could compete with Paula in terms of sound quality. Where the Amiga really comes into its own is the sheer practicality and ease of use that the sound hardware offers.

Back in the days of 8 bit home computing, sound consisted of little more than a varied assortment of beeps, hisses and gritty "bang" noises. As far as actually producing sound on a computer, I would use things called sound channels to produce musical notes of different pitch and volume.

In this respect most of the home machines of the time seemed superficially pretty equal. Each computer had between one and four or so sound generating channels, and most could also use some or all of these channels to produce something called "white noise" to make sounds which almost resembled explosions and gunshots.

And that is how sound quality on the affordable middle range of home computers stood in the early 1980s. Then things began to change. Slowly

but surely sound demos appeared that were like no previous sound heard on these machines – music that played with REAL sounding instruments, humans singing, talking and shouting. Even programs that showed promise as genuine synthesisers of human speech.

I WAS very impressed, and surprised, for although these brief snatches of sound were muffled and more that a little on the tinny side, they were my first introduction to the world of digitising. That is, the recording of an analogue sound signal, such as you might find on an LP or magnetic casette tape, and its conversion to a digital format that a computer could store in memory and play back at will.

The sound I was used to hearing on computers, those almost electrical sounding tones, were called square waves – perhaps the simplest form of sound that your Amiga can produce.

Sound travels to your eardrums as vibrations in the air, a series of pulses of consecutively lower and higher air pressure travelling at the speed of sound, which varies with respect to atmospheric pressure, but at sea level is about 761 mph (about 1224 kmh). Sounds can be represented as a graph showing how the air pressure varies as time progresses.

The attributes of a sound are therefore related to the shape and overall nature of this waveform. For example, if it is regular and repetitive, the sound will resemble a musical note.

We know that different musical instruments are capable of producing the same notes, and yet at the same time sound entirely different in every other respect. This is because their waveforms, although repeating at the same frequency, are very different. This shows on a graph of their waveforms.

On a graph a square wave looks like a line following the battlements of a mediaeval castle. It goes up, along, down, along, up, along, and so on repeatedly. The distance between each repetitive unit gives the wavelength. By measuring the time elapsed on the graph the frequency of the note can be found.

The amplitude of the wave, that is the vertical distance between its peaks and troughs, represents the volume – the change in pressure of the air that the source of the sound has produced. The human brain translates this signal into what we perceive as sound.

But what about "real" noises? People talking, dogs barking and the screech of car tyres on a wet road? What do these sounds look like if we were to draw them as waveforms on a graph? Although they have a frequency and pitch, they are very complex waves. Very little in them repeats regularly. If our simple wave produced by an 8 bit micro resembles castle battlements, the sound of a person's voice resembles that of the most jagged mountain you can imagine.

What hope then for machines trying to produce waveforms of such complexity? Not much, I'm afraid. All they could do – and this applies to the Atari ST also, and I intend no slur on that machine – would be to use raw processing power to pour byte upon byte of data – the "points" on the waveform graph – into their sound chips as a series of different volumes of sound.

This technique works because it is essentiallly volume or amplitude changes that define the shape of a sound wave. Unfortunately, the process ties up the computer's main processor for an exhorbitant amount of time, restricting the user to either simple slow programs with reasonable sound, or good fast programs with only fair to average sound.

Since to update a sound with a frequency of, for example, 10,000 "up/downs" per second – 10,000 cycles per second means 10,000 updates per second – it is easy to see why most programmers steered clear of digitised sounds.

But what if a computer were to be introduced that could take a digitised waveform of sound, a waveform about 16 times more smooth and realistic than any heard previously, and play that waveform without any burden on the computer?

It would need a large amount of memory since complex "real" sounds need upwards of about 8,000 bytes a second if they are to be convincing. It would need special hardware to handle the playing of these sounds. And to add an extra sparkle of reality, why not throw in a stereo option so that the computer could send sound to two separate sources at the same time?

Such a computer exists. It is the Commodore Amiga, designed by the brilliant and innovative Jay Miner as perhaps the current ultimate in computerised home entertainment. The Amiga can have up to four sound channels all playing separate and independant digitised waveforms. It can take these as two pairs and send them out the back of the computer as a stereo signal, each stereo line getting two of the computer's sound channels.

This is the way in which recent chart hits have been made from sampling various musical pieces and sounds and mixing these together with a vocal track. The Amiga can do all this and more. Provided you buy the appropriate hardware – which comes with its own software – you can also sample sounds for yourself.

Good examples of these kind of sound sampling hardware packages are Future Sound from Applied Visions, and Perfect Sound from Sunrize Industries. Both will let you explore sound on your Amiga and help you exploit its full potential. They can be a lot of fun, since once you have sampled your sound you can then play it back at any speed or sample rate. By doing this you can produce different pitches from the same sample.

FOR those who prefer to avoid paying for such extravagant things as hardware add-ons, why not try a straight Amiga music package? I can guarantee that a music package on an Amiga will be like you've never heard it before: Real drums, real guitars and even real voices. These can be a lot of fun, and good examples are Aegis Sonix by Aegis, or Deluxe Music Construction Set by Electronic Arts. Both are very versatile and a lot of fun to use, as well as allowing serious musical composing.

Sound on the Amiga can be fun even at the hardware level, programming in 68000 assembly language. Machine code is perhaps a little too unwieldy for the easy expression of ideas and programs, but absolute power over the Amiga hardware can yield great rewards when it comes to sound processing.



Facts from a flexible friend

Christina Erskine finds a database that is easy to use – and powerful

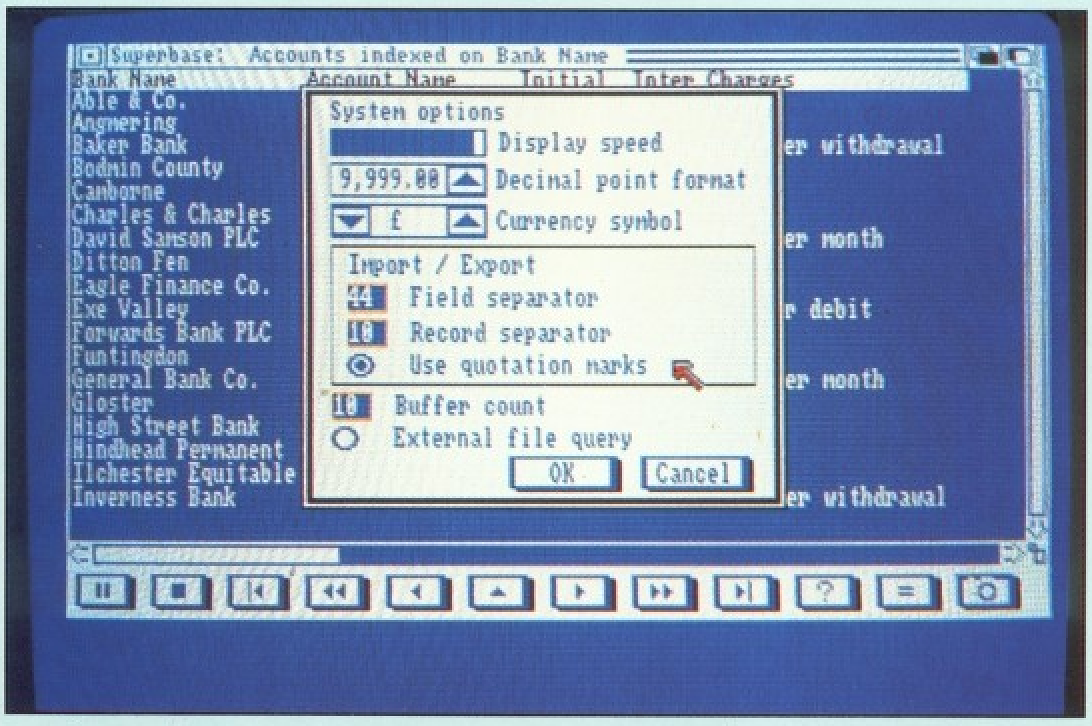
WHILE it would be unduly pessimistic to say that there is no conventional business software for the Amiga, it is certainly true that much of it is non-standard, and therefore unfamiliar to anyone who has moved to the Amiga from another machine. Thus, if new Amiga business-orientated owners are not to get disheartened quickly, the unfamiliar stuff is going to have to be easy to get to grips with if a measure of disillusionment is not to set in.

Superbase Personal has won plaudits in its PC compatible and ST versions, for its design and ease of use, if for nothing else. Now it is available on the Amiga, and with the current comparative dearth of business software on that machine, is well worth looking at.

Superbase Personal makes full use of the Amiga's WIMP user interface, with the majority of its functions controlled either by clicking on menus or icons with the mouse, or by alternative Control key codes.

Files, which are invariably asked for in the opening loading screen, are accessed by the top line menus, using the usual procedure of pointing, clicking and dragging until the right items are highlighted. Once you've got a file screen displayed, the ease-of-use factor of Superbase becomes apparent.

Most of the simple viewing controls for scanning through your records are accessed via a menu bar at the foot of the screen. This menu comprises a series of icons, which roughly correspond to those you would find on any audio or video recorder. Therefore you find your Play, Pause, Fast Forward and Rewind symbols.



Superbase – systems options

This is a masterstroke. How many times have you peered at a set of icons, trying to work out what they are supposed to represent? Given this lot, even someone who has never encountered a database before will have a pretty good idea of what to do.

Creating your own file is also straightforward, with much of the screen design work being handled by Superbase at this stage and able to be changed later. There is no messing around with x and y coordinates.

THERE is also no limit – beyond that of disc memory – to the number of fields your database can have, and the procedure for creating files, fields and records is carried out through a series of windows and icons. You'll need to specify whether your records are to be text only, numeric or date fields, and each brings up its own menu screen for you to select the parameters in which your records will operate.

You can also specify whether data needs to be entered in a particular field – useful to ensure that you don't make any slips and that your records are complete – and whether a calculation formula is appropriate. This last means that, for example, suppose you wish to record the VAT payable on a database of items bought or sold, rather than having to calculate 15 per cent every time you add a record, you can tell Superbase to fill it in on each record. You can also set a constant entry for each field. If you want to change your data later, or add to the fields in the file, this is a simple operation.

SUPERBASE is multi-indexable. You can have up to 999 indices per file. Records can be ordered and presented on-screen in a number of ways – chronologically by date, towns, surnames, whatever.

Having built up a database file, your video recorder icons enable you to view it. Manipulation involves use of either the filter button from the VCR menu, or the Project option from the top line menu.

You can view your records in a forms, record or table format. The first two are similar in style, with fields running vertically and the data



Superbase: Pictures indexed on Number

Number	Picture 1	Source 1	Picture 2	Source 2	Picture 3
001	Copperstate	DPaint	Horses	Digitized	Paula
001	Copperstate	DPaint	Horses	Digitized	Paula
002	Castle	Draw	Gorilla	DPaint	Mountain
003	Lighttower	DPaint	Amiga	Donald	Train
004	Horses	DPaint	TVDrama	Digitized	Copperstate
005	Gorilla	DPaint	Agnus	Donald	Castle
006	Amiga	Donald	Mariel	DPaint	Lighttower
007	TVDrama	Digitized	Denise	Donald	Horses
008	Agnus	Donald	Innes	DPaint	Gorilla
009	Mariel	DPaint	Paula	Donald	TVDrama
010	Denise	Donald	Mountain	DPaint	Mariel
011	Innes	DPaint	Precision Logo	Digitized	Agnus
012	Paula	Donald	Copperstate	DPaint	House
013	Mountain	DPaint	Castle	Draw	Innes
014	Train	DPaint	Lighttower	DPaint	Denise
015	House	Digitized	Train	DPaint	Precision Lo
016	Precision Logo	Digitized	House	Digitized	Amiga

Superbase Table format

next to them. Table view moves the fields so they are listed horizontally across the top of the screen, with the data underneath.

The main data manipulation functions within Superbase are the filter button from the VCR menu and the Query option from the Process menu. The filter window is where you can select records to view according to mathematical and statistical criteria. The Query option enables you to call up selected records for printing as a report, or just showing up on-screen.

Using the Process Query filtering facilities you can ask Superbase to make arithmetical calculations to print in the report as well. For example, in a customer account database you could have a number of fields for items bought and the VAT on each. You could ask Superbase to print out a selection of files, and to add the total owed by each customer, both excluding and including VAT, to the report.

The filter button is used for selecting records to view, using the field names and calculator style functions, plus AND, OR and LIKE, and "greater than", "smaller than" and "not equal to". For example, if you have an addresses index, then anyone living in Nottingham, on the phone and not owning a dog can be called up for reference – providing you'd already recorded the level of dog ownership – by ADDRESS4 = NOTTINGHAM AND PHONE NUMBER LIKE 0602 AND DOG = 0.

Furthermore, it has an excellent feature which sets it apart from many databases – that of being able to contain a database of picture files, all detailed and indexed but also viewable on screen. Such a feature would only recently have been deemed at all relevant in the conventional PC business market. On the Amiga, where one would hope business users are also using the machine's graphics power, a database that enables you to file away the result for reference should be useful. Again, the filter button allows you to call up a selection of pictures according to the parameters you set.

SUPERBASE's main strengths are in the manipulation of numbers and currency, and so it is probably best used for businesses which want records of customer accounts. This doesn't make it any less viable for dog-loving Nottingham residents, but the latter won't end up using some of its more sophisticated calculation features and shortcuts. Really, it's a waste – and far too pricey – to use as ▶

a computerised Filofax. That having been said, Superbase has a simple to use label printout facility, with all the filter options available, of course, and so can be happily used for names and addresses as well.

Superbase is significantly easier to get going with than any other database I've come across. For this reason, I would certainly recommend it to those unfamiliar with the way databases work.

Paradoxically, the manual, while for the most part clear, is more concerned with getting to know Superbase than getting to know databases in general – and is especially glib on starting up and the mechanics of preparing discs – so you will need a good idea of what it is you want to do with it, to get the most out of it.

While the program is memory resident and therefore usable with a single drive Amiga system, it is a lot simpler with a dual drive. You don't want to keep your records on the master disc or its back-up, and with a single drive system there is, inevitably, an annoying amount of disc-swapping required.

However, the ease-of-use factor is durable; it isn't just a case of being easy to get into, but it's also enjoyable to keep going with. The extensive use of the mouse and menu system of choosing parameters and calculations means that it is quick to select your manipulation preferences, and probably easier to learn from experimenting with the menus than on a database which uses control codes and text lines.

This, perhaps more than anything else, makes Superbase an excellent program for anyone starting out on computerising their records, or who is going to have to spend a lot of time working with the derived data who wants to make it as little of a chore as possible.

REPORT CARD

Superbase Personal
Precision Software 01-330 7166
£99.95

USEFULNESS ....
Superbase is flexible enough to cater for the demands of most users.

EASE OF USE ....
Simple, meaningful commands which do not become annoying with proficiency.

INTUITION ....
Fully intergrated along Commodore guidelines, will multitask.

SPEED ....
Memory resident code which is not hindered by the Amiga's slow drives.

VALUE ....
Despite being very good it is pricey.

OVERALL *84%*
Priced a bit high for the home user but still an excellent Amiga package.

Camera comrade

Simon Rockman looks at the Digipic while the Digipic looks at Simon Rockman



DIGIPIC is from JCL, a British peripheral from a company which has been producing add-ons for Commodore computers since the Pet days. The author of the software, Harry Broomhall has been something of a Commodore celebrity since the days when 8k was a lot of ram and a disc drive an exciting luxury. It's great to see a local company taking on the US competition, but how does it shape up?

Digipic is a video digitising peripheral. It will take a frame from a video source – like a camera or video recorder – and turn it into a bundle of binary digits with which to illuminate your Amiga screen. Frames can be stored in HAM, IFF and Digipic's special extended grey scale format.

You don't get a camera with the Digipic. What you do get is the digitiser – a dull grey box with a lone LED to indicate when it is on, a 3.5in disc with the Digipic software, a neat but simply printed manual and a filter for taking colour pictures.

Because of the way the Digipic works you need to use a black and white camera, even for colour pictures.

You probably know that your computer sends signals to the monitor as red, green and blue signals. The filter allows the computer to "see" red, green and blue elements of whatever the camera is pointed at so that the software can handle them individually.

Special filtering circuitry allows a colour camera to be used. This also means that you can squirt pictures into ▶

◄

Digipic from a video recorder and infringe loads of copyrights.

The Digipic plugs into the parallel port which means that you will have to unplug anything else connected to the port – usually a printer. When Commodore designed the A2000 and 500 it changed the connectors to bring things like the serial and parallel ports in line with world standards. Why it didn't extend this to the monitor plug is a mystery.

The practical upshot of this is that JCL has had to put two connectors on the lead, one of which looks temptingly like a through bus for the printer. It isn't, and trying to connect the two will cause major problems.

HAVING set up a camera and tripod, a few lights, an optional monitor which will allow you to focus a camera, the Amiga and the Digipic with all the associated leads, you are bound to have tripped over a few wires. This is the point at which you appreciate that the software at least is easy to operate.

You may not have a monitor with which to check the signal, so the software does its best to help you out. A loop mode digitises the picture as often as possible. The hardware captures a frame in 1/50th of a second, so you don't need to worry about things moving and blurring the image. But it takes a little while for the picture to get from the ram in the Digipic to your screen, which means that you can miss pictures. Digipic isn't really meant for action stuff.

Pictures are stored in what the Digipic calls slots. Getting the three pictures needed for a colour frame and the Digipic software into a 512k machine is tight, and future software revisions may well require a full megabyte. Anyone who is serious enough about graphics to have bought a digitiser will probably need the extra ram for other things anyway.

The picture starts life in the 64k ram inside the Digipic. Digipic II will have at least 96k, so that it can offer a screen resolution of 640 by 400, but it will be a long time before it becomes available. Also it is supposed to be secret.

When the whole picture has been stored in the Digipic it is sent to the Amiga, which takes about 0.6 seconds. The data is sent to the slot you have chosen and stored in two forms – bit plane (as used in Deluxe Paint), or a more efficient compacted form. You'll get about 20 standard pictures on a blank disc, the number of compressed frames depending entirely on how efficiently they compress.

You can squirt shots into the slots one after another by using the Multi feature, or you can select the slots individually. Because a copy of the last frame is held in the Digipic you can mess with the contents of the current slot safe in the knowledge that there is a copy of the original at the other end of a parallel lead should you need it.

The thing which impressed me about the Save feature was that it used the correct Amiga calls, which means that it can access devices developed after the software was finished. In my case this meant a hard disc with strange partitions. It means that Digipic can save to the IBM bridgecard (the Janus device), a network or even an optical disc. Wonderful things standards.

Harry Broomhall did admit the Save Window ignored some conventions – blitting the requestor straight on to the screen and not using a proper window – but when it comes to talking to the outside world the software keeps kosher.

Most TV cameras handle contrast, brightness and sharpness automatically, but this will not necessarily produce the best results, so there are tools to alter the display under software.

EXTRA tools allow you to do clever things with the picture. You can clip exceptionally bright or dark parts of an image to make results more even. A threshold control alters the way the Digipic views different shades and an edge command spots changes in brightness for image recognition – if you are up to writing the software.

Digipic stores six bits per pixel, so colour is held to 18 bits over three slots. You can reduce this accuracy with a tool called quantise. The result is usually Sixties pop art.

The six bits a pixel offers 64 levels of grey. To display all these JCL provides an extended grey scale adaptor (EGSA), which plugs between the computer and the monitor. Pictures which use the EGSA cannot be used without it. To my mind this made it of extremely limited use.

Like its author, hardware designer Richard Leman, the manual is friendly and chatty. It is proof that what a manual says is far more important than the quality of the typesetting. It covers the Digipic comprehensively, updates being provided in a readme file on the disc. A more comprehensive index would have been useful, but with only 54 pages which are laid out in a logical sequence its omission is not the crime you might suppose. A better manual would have allowed for some example pictures.

This is a scientific instrument – most of its applications will be found in laboratories – and for this reason its price is not that important. If it is being used in conjunction with thousands of pounds worth of test machinery the fact that it costs £100 more than NewTek's Digiview is not important.

Digipic offers the same facilities as the NewTek product but has a faster grab rate and feels, subjectively, better made. It is a fun product to use but it seems a bit of a luxury unless you are either using your Amiga professionally or as a dedicated artist.

REPORT CARD

Digipic
JCL Business Systems/Precision Software 01-330 7166
£299

USEFULNESS
Scientific and art applications will appeal to a lot of users. Video recorder compatibility makes it a techie toy.

EASE OF USE
Marred only by the lack of simple things like a power switch and printer through port. A doddle to set up.

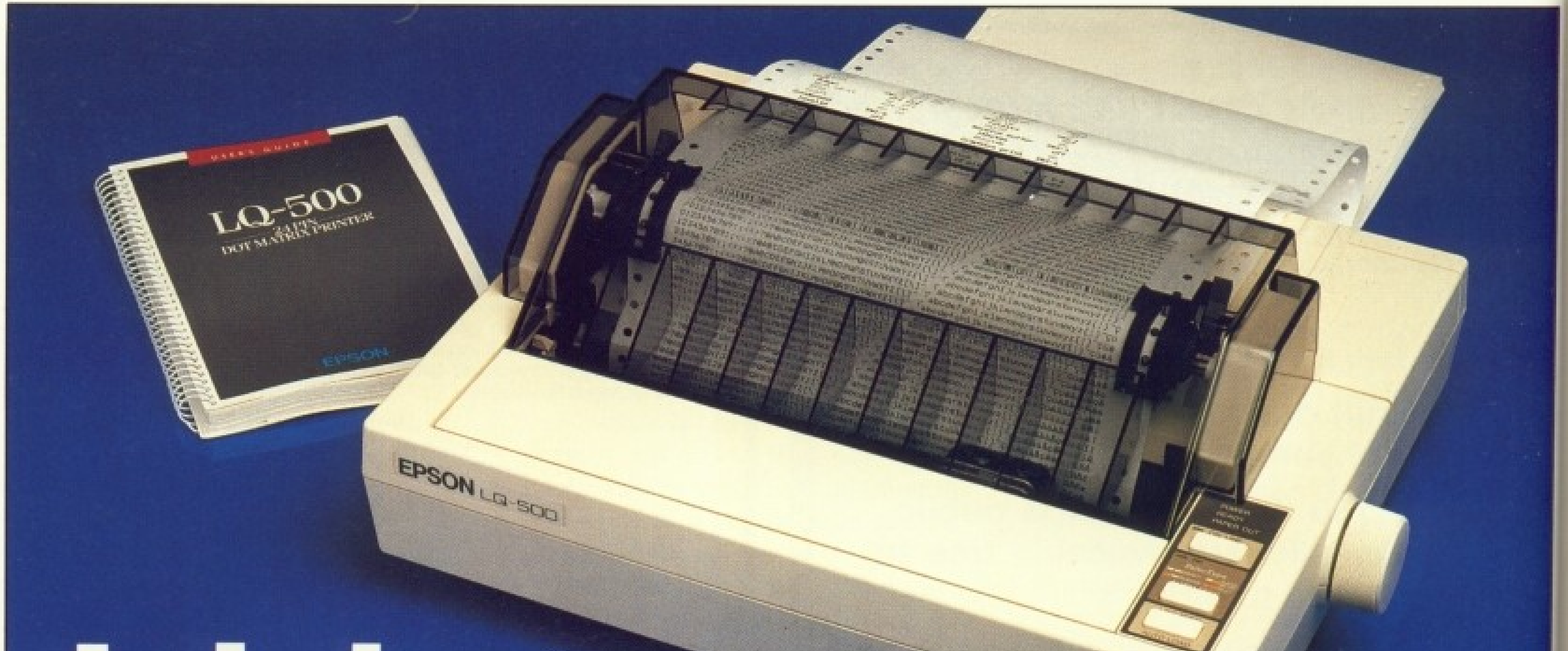
SOFTWARE
Excellent, with a wide choice of functions, particularly the ones Friendly and well written.

SPEED
High capture rate but some of the functions, particulary the ones involving colour, take a while.

VALUE
A top quality product is never going to offer stunning value. You pay a lot more for slight improvements.

OVERALL *61%*

Solid and reliable. Built with the specialist user in mind but tremendous fun for the wealthy gadget freak.



Joining the dots

Rupert Goodwins finds nine pins good but 24 pins better

EPSON has been making printers for a long time. Previous offerings such as the FX-80 became standards – the IBM PCs, as it were, of dot matrix technology.

Rugged construction and impressive reliability gave Epson an enviable reputation and a large chunk of the printer market. Recently the secret of producing good, cheap dot matrix printers seems to have been discovered by a swarm of other Far Eastern countries, and Epson's efforts in other fields haven't met with the same success.

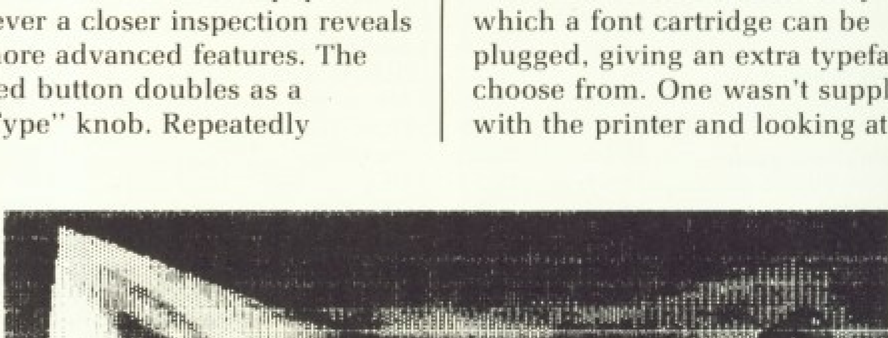
Now Epson is reclaiming lost ground doing what it does best – producing high specification printers at reasonable prices.

The LQ range has been around for a year or so now. Whereas earlier printers had nine pins in their heads, the LQ series has 24. More pins means a higher resolution, better defined characters and faster output. Epson and Amstrad have chosen LQ to show that the printers are true letter quality, rather than the NLQ or near letter quality mode which some 9-pin printers offer.

The LQ-500 is positioned towards the less expensive (Epson printers defy the word "cheap") end of the range. It is fairly innocuous in appearance – the standard off-white case, the standard set of three buttons in the standard right-hand position, the standard connector position where it fouls the standard paper.

However a closer inspection reveals some more advanced features. The form feed button doubles as a "SelecType" knob. Repeatedly pressing this while on line chooses between three standard fonts – draft (fast but respectable), Roman (slower but really quite pretty) and sans serif (slow and truly luscious). Two LEDs light up in various combinations to show which typeface is selected.

There is a slot hidden away into which a font cartridge can be plugged, giving an extra typeface to choose from. One wasn't supplied with the printer and looking at the



Even tiny screen dumps look good

example typefaces in the manual I believe I can see why. For any application I can think of, the three fonts available are more than adequate.

Paper feed is interesting in the LQ-500. The tractor feed for continuous stationery is basically the same as in older models; it's easy to set up and quite forgiving of slightly skew-whiff paper. But, as always, truly hamfisted users can produce crumpled hamster bedding with remarkable ease.

THE LQ-500 has a quite effective single sheet auto-load feature which gets it right more often than most, and this is one of the most pain free dot matrix printers to use with company letterhead or single sheet forms. For the hardened photocopy paper user, a cut sheet feeder is available.

Epson is committed to dip switches. At least they are accessible in the LQ-500, and pressing Line Feed during switchon prints a menu that describes which switch does what, and what the setting is. There's not quite enough information here to let you lose the manual with complete impunity (What does CSF mode mean? Ah, Cut Sheet Feeder...), but enough to encourage informed fiddling.

The manual is very good indeed. Index – hurrah. Good clear English – hurrah. Oodles of setup and trouble-shooting information – hurrah. The only place where other manuals might score is in application-specific information, because the LQ-500 manual just mentions word processors, databases and graphics programs in passing.

However, every option is explored and a lot of information is provided in the 230 pages. There's a cut-out-and-lose-quick reference card as well. On the whole this is the best printer manual I've seen. Entirely commendable.

AND so to the printing. Each of the three fonts can be printed in three basic sizes – 15, 12 and 10 pitch. Then there's double height and double width, as well as the more normal dot matrix tricks of bold, condensed, superscipt, subscript and underlined.

There are also some fancy tricks ▶

Take your pick...

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with what Epson calls outline and impressive I'm not entirely sure that the result is more readable than plain unadorned 12 point sans. Great fun to play with though, and be sure that the first few days of LQ-500 ownership will see off a boxful of printer paper as Basic listings and letters to great aunts appear in double height shadowed Roman.

There is also a proportional spacing option which looks nice. Just don't expect to get right-justified text out of your word processor.

You can define your own character sets, either by copying the existing sets to the printer's internal ram and modifying them, or by composing an entire alphabet and uploading it. You do need some special software for this, although enough information is provided in the manual to allow a competent Basic hacker to write the necessary programs.

The copy a character set and modify it option is particularly nice if you're thinking of producing a newsletter or some company documents. A logo or icon can be incorporated with fairly minimal effort.

As you might hope with an extra 15 pins to play with, graphics can be much improved over the 9-pinners of yesteryear. It's up to laser resolution – 360 dots per inch are possible – which is more than adequate for most non-commercial applications.

Epson was demonstrating a 48-pin dot matrix printer that was better than a laser at a recent computer show, although as the thing was dearer, noisier and slower than a cheap laser printer, it was more a curiosity than anything else.

A note of caution though: Although



The 1.3 printer drivers make short work of screens

the LQ-500 is fully compatible with earlier Epson models, if you want to use the extra resolution in graphics mode your software has to know about the LQ series. Most software doesn't, and although just being Epson-compatible will ensure an output of acceptable quality, it won't be as good as can be obtained.

STILL, as the ESC/P (Epson Standard Code for Printers) which defines the extra modes seems due to become the industry standard for this type of printer, software capable of exercising the LQ series to its full capacity will become more common.

Since most Amiga software uses the preferences settings, you should set this to Epson with Workbench 1.2 or EpsonQ if you have Workbench 1.3.

Speed isn't a problem with the LQ-500. For once, the manufacturer's figures of 180 dotty, or 50 beautiful, characters per second seem entirely justified. Fifty cps isn't First Division stuff, but the quality of the text (I'm in love with the 12-pitch sans and the condensed Roman) is.

Combined with the 8k buffer, the 180 cps made reasonably short work of some program listings I had to produce. Although I still sigh over the 400 cps device I had some time back, I'd settle for the LQ-500 without a qualm. The printer is noisy, although not unbearably so. Telephone conversations were possible while sitting next to the beast.

Sorry if this review lacks vitriol, but this reflects the entirely amicable three weeks I've spent with the printer. During that time I've had occasion to play with a near competitor, the NEC Pinwriter 2200, and, without going into a full comparative review, it would be fair to say that the Epson won on points in every department. There aren't many products I recommend to friends without reservation. Among them I would now include the LQ-500. I confidently predict that in three years' time the world will be as full of working Epson dot matrix printers as it is today. With the LQ-500, Epson is still two steps ahead of the pretenders to the dot matrix crown.

PS: I heard that Epson is so-called because its first product was called the Electronic Printer, EP. For their next effort it wanted to show that the new printer was a natural successor – EP Son. Epson. Do I believe that? Um....



REPORT CARD

Epson LQ-500 dot matrix printer
Epson UK, 01-902 8892
£385 plus vat, but it is going to be widely discounted

USEFULNESS
With the LQ-500 by your side you have it all bar the laser. Speed and quality.

EASE OF USE
The autoload works very well, but the leads hamper continuous stationery.

SOFTWARE
Compatible with old Epsons but sets a new standard which others will follow.

SPEED
The claimed 180 cps (draft) and 50 cps (letter quality) seems accuarate.

VALUE
Very good value. Even more so if you wait for the inevitable discount.

OVERALL 87%
Bit noisy, but the speed and quality more than make up for this slight inconvenience.

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AAARGH

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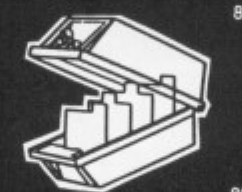
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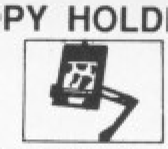
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The Max factor

Max Toy is the president of Commodore US. He gave a talk to the first Amiga Users' Group meeting held at the Palo Alto Hyatt, in California. It was standing room only, with up to an estimated 1,200 people arriving to see Mr. Big. Here's what he had to say, as reported by Jim Groneke

HOW'S business? Business is good! We have had seven straight quarters of profit, with Commodore now on a very solid base.

The product line has been expanded up from the C64 and C128 to include the MSdos product line and of course, the very solid Amiga product offering that gets better every day.

The Amiga product line passed an important milestone at the end of the calendar year. The install base is now over 500,000 Amigas. And what's even more important is how quickly it's becoming 600,000 Amigas.

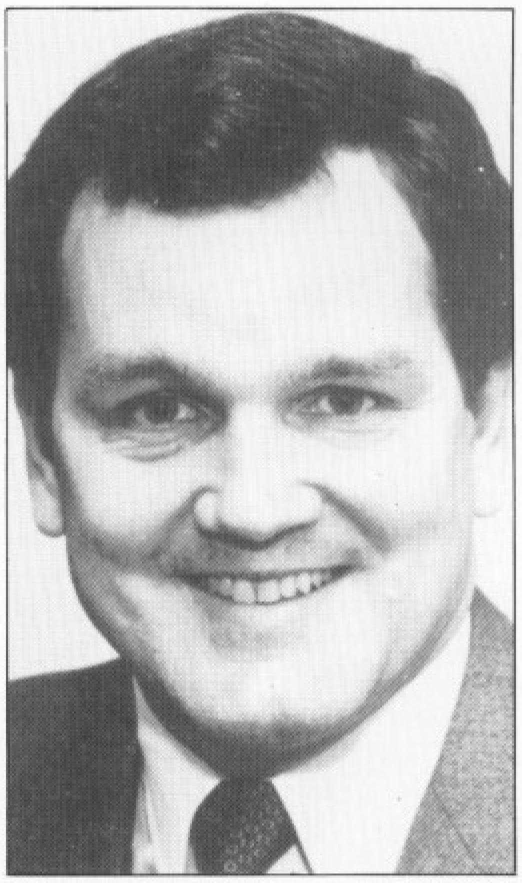
Another aspect of the Amiga's growth is the tremendous amount of support we've had in the area of software. Amiga now has over 1,100 recognised titles, and if you stop and think about the amount of time that's passed since the technology has come on to the marketplace, you'd realise that it's growing faster than other products in the category other than the IBM PC early on.

There are some very, very positive things happening in the marketplace: We're seeing growth in distribution, and we've seen growth in the quality and quantity of the people who are supporting the product in the third party peripheral business as well.

The C64 business is good, the MSdos business is good, and all of these things have helped to build a solid foundation for Commodore.

WHAT do we see for the future? We are continuing to install products in the Amiga category, and you are going to continue to see some of that support. But I believe the most important thing that we've seen in that area is the support from people such as yourselves.

In the areas of continued business growth where our objectives are, as we move forward I think you're going to see some very positive things that we've been able to effect, as it relates to building a solid business for Commodore.



Max Toy: "New things in the way of connectivity"

The Hanover Fair is a technology fair, compared to some of the shows that we have in the US that are more end-user oriented. So what we were demonstrating in that area was technology. There's a big difference between technology and products.

The 2500UX was a configuration of a 2000 with a 68020 board in it and a 100Mb hard drive, running Unix (version 5.3).

You are going to see us doing some new things in the way of connectivity and transportability of solutions across technology bases. We have already announced that this configuration will ship in Germany sometime in late fall.

AT this point in time, I have no intentions of introducing a 2500UX in the US in the calendar year 1988. That does not mean we are not going to continue to develop and work in the area of Unix.

There is some development on an Amiga 3000 activity underway, to very aggressively pursue 68030 technology, but I would not expect anything from a product standpoint until the 1989 time frame.

Part of that has to do with, again, doing more than just technology to turn it into a product . . . a product that has a base of software, a base of peripherals, and that has customer support, and for which a better job of positioning and understanding of its marketing needs has been done.

Back in the 1982-83 time frame we, for all intensive purposes, destroyed our distribution system here to sell these kinds of products. We are now in the position of rebuilding those

▶

◄

distribution systems and ask you to continue to support your local dealers. Those are the people who are going to bring the product to the market and support it with your help, and we look forward to that relationship for the whole market area.

WHAT we have done is to divide our business into two areas. We now have a consumer business and we have a professional business, and we are recognising and supporting our products in that way.

I've been at Commodore for almost six months, and there were two or three things that I found when I came on board that I think are important for us to build upon. And those are the things that don't show up anywhere on Commodore's balance sheet, income statement or show up anywhere as an asset on our books, and yet they're tremendous assets which Commodore has.

We have the second largest installed base of computers in the United States, surpassed only by IBM. There are over nine million active Commodore customers in the marketplace. The total number ever installed is somewhere in excess of 11 million, but the active number is around 9 to 9.5 million. So that is a tremendous asset that doesn't show up. It's also an asset that Commodore's never really explored or exploited.

THE second thing we have going for us, that I think is probably one of the most significant things that doesn't show up on the balance sheet, is represented here in this room. I'm not here to try and patronise you, I'm telling you that I am a businessman, and not a bad one at that, and I tell you that I recognise user groups and the active participation of our customer base as being one of our greatest assets.

Now there again, that is something that Commodore has not utilised. It's not something that we've taken advantage of as partners to try to support. We've done a poor job of supporting you in the business. I'm going to be honest with you and tell you that we didn't get here overnight and we're not going to get out of it overnight.

But I will tell you that we are going to take definite strides to improve that. There are going to be definite strides to improve our support for the distribution base, and that also is a strong asset that we have. This is just the beginning.

Rather than be all things for all people, we're going to pick a few things, and try to do those very, very well. We are going to be eliciting your support. We recognise that the user group body represents more combined intelligence on the Amiga product technology than exists anywhere in the world. And we have to get smart enough to figure out how we together can utilise each other's strengths.

"We are very, very excited about the future, and very excited about today."

I think the biggest challenge we have with value added resellers (VARs) is to define what one is. But once we make that arrangement, we intend to support and work with them very closely and in the areas that make good business sense.

Again, our approach will be very rifle shot for that market place, and we will be expanding to have more VARs. Some of them have storefronts and some of them don't, but we will be working in that area.

I think we have recognised that the marketplace is very bright for the opportunities in front of us. We have focussed our research and development to now take advantage of the Amiga platform that's been established primarily by the Amiga 2000, to use that as a base to drive forward in the future.

You're going to see things from CBM, working very hard and very closely with third parties, to establish a connectivity strategy, so that you can begin to see our products moving into the business environment. Our approach to the business marketplace is going to be very pinpointed.

THERE'S only one company that I know of in the computer business that can approach the marketplace on a flat, horizontal basis. I used to work for that company. Sometimes it can do it quite well, and sometimes quite poorly.

The rest of us have to approach it in a very single, narrow rifle shot method. In order to do that, we have to provide the support tools, elicit support from third parties, and expand both the hardware and software bases. We are very actively pursuing all those areas.

I hope that you will be able to see in the very near future some positive announcements from us that will encourage the entire marketplace. We are very, very excited about the future, and very excited about today.

The things in the past are in the past, and I don't have answers for all of those.

But I can tell you that we are going to concentrate our efforts to improve communications, to increase support and parts availability, and to make products available to you and to the marketplace on a timely and regular basis.

THE Amiga product technology is our strategic direction. We will continue to support other products, but the primary emphasis and our key to success is going to be with the Amiga technology.

The product is doing very well in the rest of the world. I received an ad from Germany the other day. This was a newspaper ad, and it featured the Amiga 500, and in the same ad by the same company were wine, cheese, and canned tomatoes.

The Amiga 500 is in grocery stores in Germany and doing extremely well!

Time and magik

The trilogy

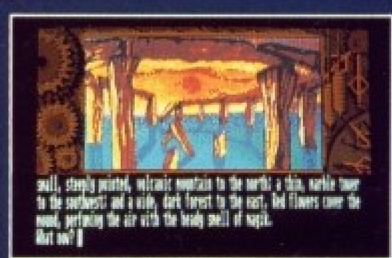


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Screen shots from Atari ST version

What the press have said:

LORDS OF TIME: ***"Destined to become a classic"*** – *Computing with the Amstrad.*

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Starglider is the all-time classic game created by Jez San for Rainbird Software. Its superb 3D vector graphics, digitised sound and amazing playability created a storm when it was first released on to the unsuspecting Amiga market.

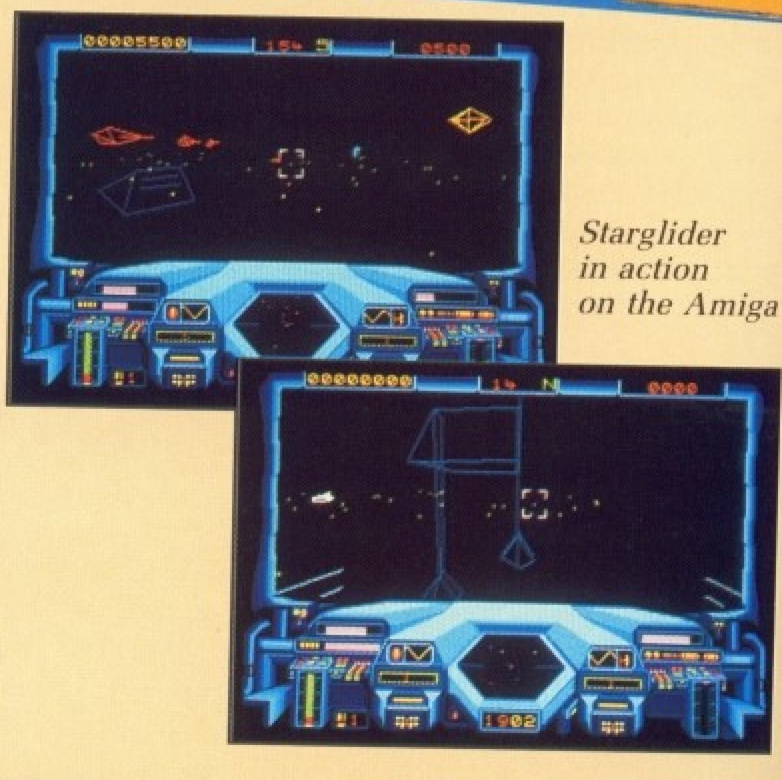
Swoop round the towers and blast the stompers. Seek out and destroy the menacing Starglider One with the flapping wings, and dock with the rotating missile silo.

This is a combat flight simulator of the first order, with the perfect mixture of strategy and dexterity – a masterpiece of programming design and execution!

Every Starglider pack contains:

- 3.5in games disc
- 64 page scene-setting novella
- Full-colour A3 poster
- Quick reference key guide

This excellent game would normally set you back £24.95 – but you can obtain it *free of charge* by taking out a subscription to Amiga Computing. Alternatively you can buy the game outright for just £14.95, a saving of £10.



Starglider in action on the Amiga

TO ORDER, PLEASE USE THE FORM ON PAGE 85

Motoring journalist David Vivian swaps a leather Reccaro and momo steering wheel for a comfy easy chair and a Konix Speedking to compare driving on an Amiga with the real thing

Test Drive tested

PEOPLE are always coming up to me at parties and asking "What's the best supercar you've ever driven?" I tend to look blankly at them because firstly I've never seen them before in my life and secondly that being the case, how do they know I've ever set foot in anything remotely resembling a supercar? "That bloke over there with the blank expression – he works for a motoring magazine." There's always *someone* who knows and, not content with knowing, has to tell everyone else.

It wouldn't be so bad if the people who asked the question believed the answer I've spent years and thousands of miles formulating. Admittedly, the answer I give changes every time – mostly because I can't make up my mind and sometimes because it's a particularly good party – but whatever I say is always met with a look of abject disbelief. Testarossa? No...! Better than a Countach...? Are you taking the mick? Or. Porsche 911? That heap of German dog's mess! Call yourself a motoring journalist?

I can live without the abuse. In fact, I can live without the "supercar expert" number altogether. When you think of the obscene amounts of money involved, there's something distinctly unpalatable about telling people how to spend it, even if you do know best. Far better that they should climb behind the wheel, fire up and find out for themselves.

Well now they can. All they need is an Amiga – preferably with a decent monitor – and a copy of Test Drive by Accolade.

Ferrari Testarossa, Porsche ▶

David Vivian takes in-depth research seriously





The British entry is the cheapest contender, but is still a pukka sports car

◄

911 Turbo, Lamborghini Countach (pronounced Kooon-tash), Lotus Esprit Turbo, Chevrolet Corvette – the ultimate group test played out by you and a few choice microchips.

Now the only problem is which one to drive first. OK, Test Drive is just a not-very-floppy piece of plastic and an Amiga is a pretty stiff piece of plastic with moving keys and a port for a joystick, and a joystick that just waggles around and has a few buttons on it.

Even if you've spanned the galaxy at two-and-a-half times the speed of light with this collection of components, I can sense that you're just a teensy bit sceptical that they can accurately simulate what it's like to travel at 170 mph or hit 60 mph in five seconds on a rocky mountain pass.

Relax, it's just like the real thing...it says here...yeah. *They handle like the real thing. They brake like the real thing. They move like like the real thing. In fact, Test Drive is so realistic you'll swear the G-Force has pinned you to your seat. Welcome to life in the fast lane.* Yep, it's all here in black and white. So let's test drive Test Drive.

A lot of clever stuff happens on the monitor before you get to drive any of "the world's most exotic cars". First you see the super-slick title screen with its tantalisingly dangled key fobs and glamorous reflection twinkles, beautifully resolved by the Amiga.

The Accolade multi-channel synth track that goes with it – in stereo if you plug the computer into your hi-fi – is funkier than Jack Mix II and twice as repetitive. Press the joystick button and the opening screen scrolls up to introduce the contenders. Neat.

No need to have a pile of *Motor*

The Corvette rockets forward, not too hot on corners



road tests by your side, either. Each car is displayed in profile with its spec sheet (which includes performance data) underneath. Let's see, 173 mph top speed...5.2 sec 0-60 mph...sounds like a Lamborghini.

Lamborghini Countach

Is this the greatest supercar of all time? No. But try telling that to a little boy: He'll give you the "I suppose there isn't a Father Christmas, either, blockhead" look. Especially if he owns one.

The Countach is one of the most arresting shapes ever to take to the road – it doesn't merely attract attention, it grabs it by the lapels and gives it a good hard shake. In the outrageousness stakes, at least, it's still the champ.

Otherwise, this car is disturbingly overrated. It won't do the 183 mph claimed for it, it doesn't sound very nice, it has a terrible gearchange, clutch and throttle action and awkward controls. It handles well, but then so does a Caterham Seven.

The Test Drive programmers have clearly focused on the Lamborghini's strengths. The Countach was easily the swiftest car up The Rock and the easiest to drive as well. Its acceleration from rest could only be described as fearsome – realistic enough – but the completely neutral cornering balance and seemingly limitless grip were a bit hard to take seriously. Lamborghini's engineers should buy this program. It's more fun than driving the real thing.



Oh dear, didn't see that corner. Call for rescue on the Cellphone

Ferrari Testarossa

Is this the greatest "exotic", then? Closer, much closer. I have nothing but respect for the big "redhead". It doesn't look as aggressive as the ▶

Travelling at 181 mph uses a lot of gas. It's time for a refill



◄

Countach – it's not as relentless on the eyes – but I think it actually possesses more physical presence. Its magnificent 5 litre flat 12 sounds better, too: Rather like a Porsche 911 in "Sensuround".

The Testarossa is very fast – 181 mph flat out – but it doesn't accelerate as violently as the Countach (0-60 mph in 5.3 sec against 4.9 sec) and in broad terms it feels a softer machine to drive. Think of it as a superfast grand tourer rather than a raw, red-blooded racer.

That's pretty much how it seemed on Test Drive. The programmers correctly identified that flat 12's great flexibility (less gearchanging), but what happened to the handling? The Testarossa may not corner with quite the precision and bite of the Lambo, but this one was all over the road and then some. I actually frightened myself.

Porsche 911 Turbo

The 911 is a bone of contention between motoring writers. Some would rather walk than drive one; others can't get enough of the perpetual rear-engined Porsche. One thing all are agreed on, however, is the Turbo's awesome performance. This car really does haul in the horizon when the turbo blows.

Not so in Test Drive. The programmers have dialled in the right amount of turbo lag – the 911 Turbo's single biggest failing – but the tidal surge of power that should follow it amounts to little more than a burst water pipe. Handling is convincingly tricky on the limit, but not as bad as the Ferrari's. A blatant misrepresentation of the facts, I'd say.

Lotus Esprit Turbo

Not as exotic as its Italian peers, the Lotus is nevertheless a kosher supercar. All the basic elements are right. It's very low, very wide, very awkward to see out of and very fast. Like the Lambo, it possesses near track-car reflexes and can generate formidable amounts of lateral grip.

Probably slightly more than the Countach in reality because of its lighter weight, though the Test Drive programmers don't quite see it that way.

Their Esprit hangs on pretty well but doesn't corner with the electromagnet security of the Lambo.

Otherwise, this is probably the most accurate simulation of all. The car felt neat and tidy with pin-sharp steering and fast responses. Its peaky engine characteristics were accurately reproduced, too.

But for its shortfall of grip it would have beaten the Countach up The Rock.

Chevrolet Corvette

I have to confess that I've never driven a 'Vette and, if the Test Drive simulation is anything to go by, I'm rather glad. Even concentrating so hard that pearls of sweat dropped on to the Amiga's keyboard, I couldn't get more than half way up The Rock without doing a Burt Reynolds and flying off towards the edge of the road and destroying the car.

This thing handled like a truck but went like Concorde. It was too hard for me.

Conclusions

There will doubtless be better supercar simulations written for the Amiga, but I'm not complaining about Test Drive. The Esprit was uncannily close to the real thing, and if the programmers have been unduly kind to the Countach, so what? This is all about living a fantasy, and who wants to drive a Lamborghini that's anything less than totally wonderful?

At least I know what to say next time someone asks me: "What's the best supercar you've ever driven?"

● *David Vivian is Road Test/Features Editor of Motor magazine. His book, Supercar: the Myth and the Magic, is published by Osprey in October.*

REPORT CARD

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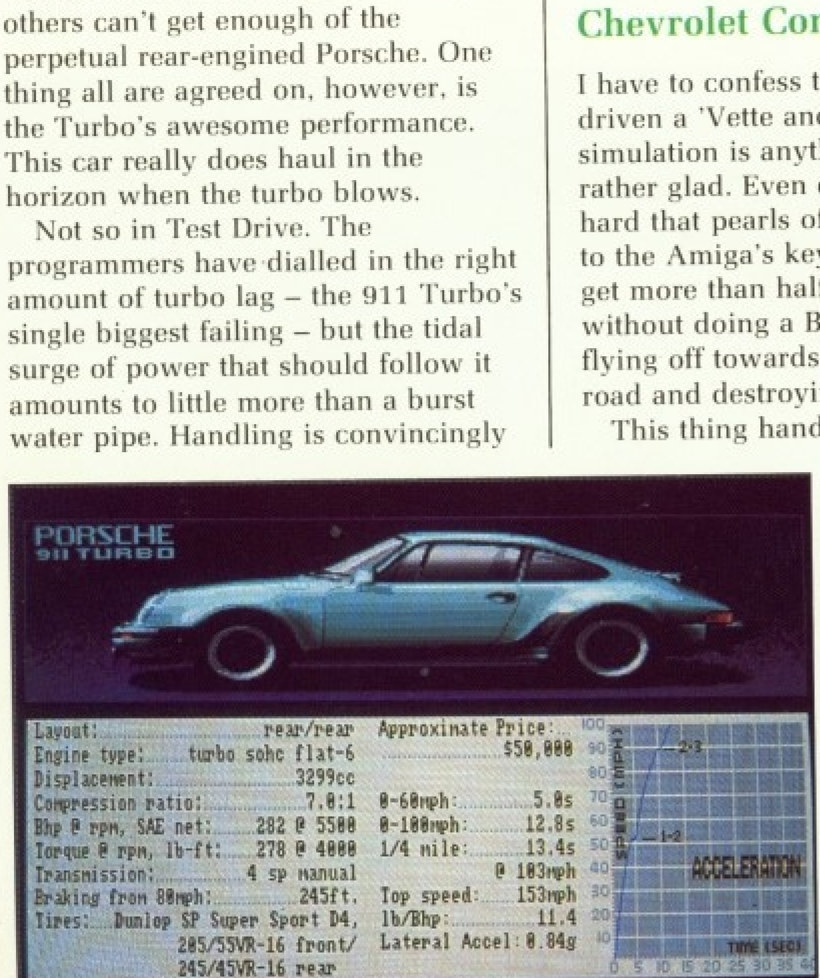
SOUND
Realistic engine roar, but all the cars sound the same. No turbo whine on 911.

GRAPHICS
Sideview of cars magnificently drawn, but the 3D view on the road is weak.

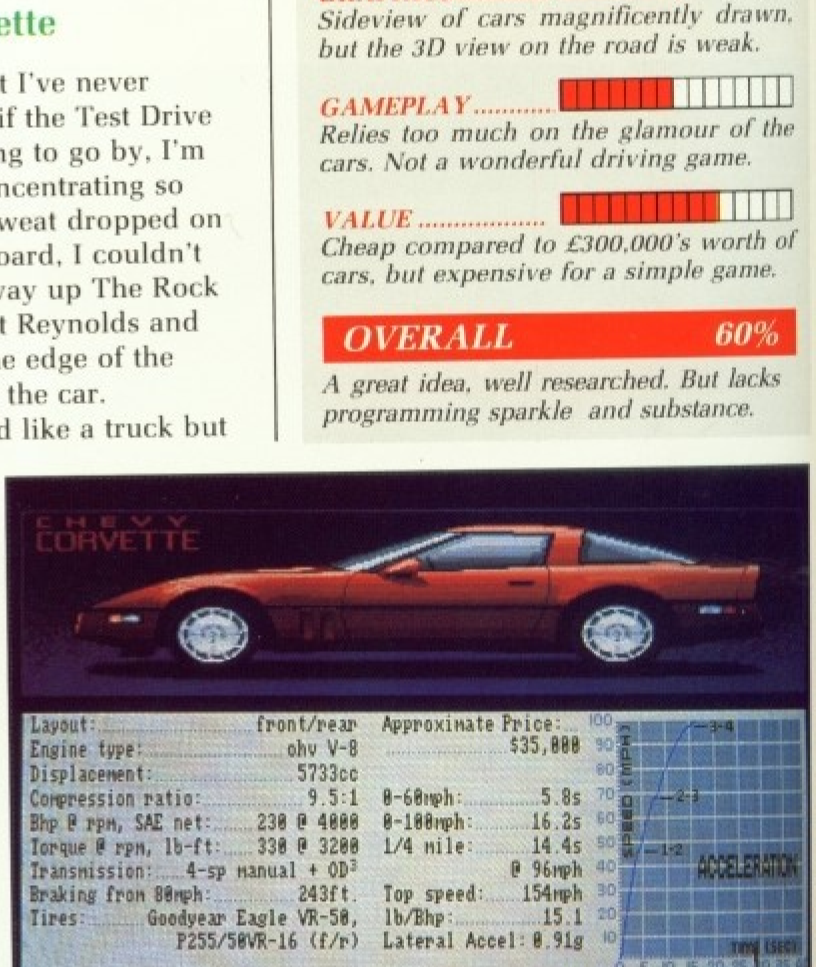
GAMEPLAY
Relies too much on the glamour of the cars. Not a wonderful driving game.

VALUE
Cheap compared to £300,000's worth of cars, but expensive for a simple game.

OVERALL ***60%***
A great idea, well researched. But lacks programming sparkle and substance.



Decades old and still going strong: Germany's mean machine



The figures hide road manners that the simulation does not

XENON

IN almost any industry, timing is the single most important factor deciding whether a product will be a immediate hit or a total failure. On many occasions single days have meant the difference between glory and defeat.

The reason for this little parable is Xenon, the first release for the Amiga by Melbourne House, now a wholly owned subsidiary of Mastertronic. Based on the well known arcade game, it could have gone down as the greatest shoot-'em up for the Amiga, except that it was released almost simultaneously with Sidewinder (this time by Mastertronic), a game which is at least as good, and less than half the price.

Now correct me if you wish, but I would say that Mastertronic has shot itself in the foot.

Anyway, enough hypothesising. As with all games that software houses expect you to pay £19.95 for, Xenon come with a – thankfully – small novella, telling the story of how you must go the aid of a Captain Xod who is apparently in deep... well, considerable trouble.

To succeed in your mercy mission, you must fight your way through 16 different zones collecting essential supplies for the fleet on the way. Each time you complete a zone you have an opportunity to refuel and rearm, but only after you have dealt with a huge Nemesis-like alien.

Anyone who has played the arcade version of Xenon will immediately feel at home, for to give the programmers behind the game credit where it's due, they have produced one of the most complete and accurate arcade conversions I have ever seen.

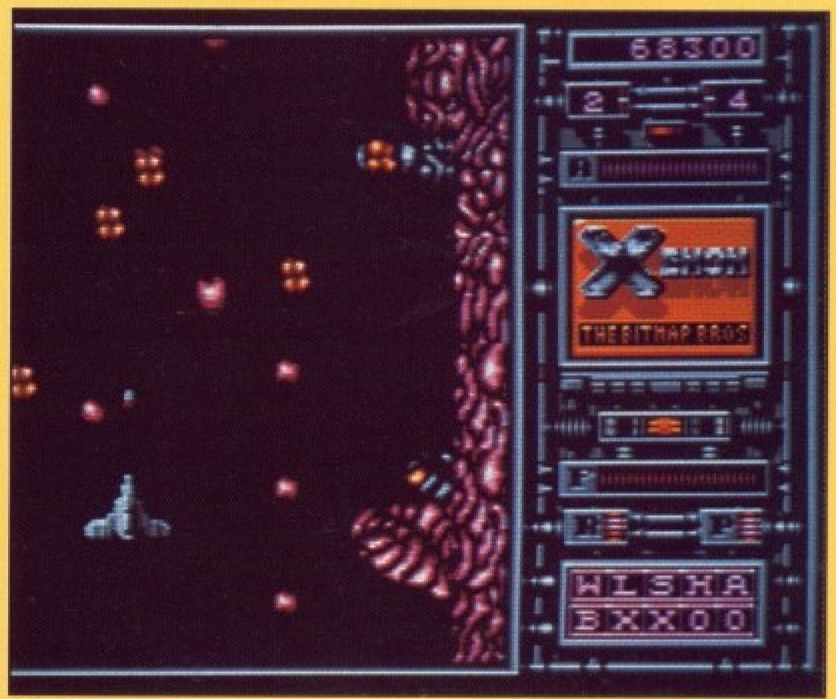
For those of you who have not played the arcade game, Xenon is a twin-role fighter. Depending on what the situation demands, you can either use a ground based multi-directional tank, or a faster vertically flying aircraft.

One of the most annoying features of Xenon is the method of changing from one craft to another, something that in most cases needs to be done in a hurry. You must either tap the spacebar or move the joystick from side to side.

If you are not too busy with the aliens the spacebar is no problem, but the joystick is little short of a pain. On more than one occasion I found myself changing ship purely through the ferocity of my joystick movements. This always ended in unexpected death.

As you travel onward and upward, killing the right aliens and gun turrets will result in your ship becoming an increasingly potent force. As with games such as Nemesis and Salamander, these extras include increased fire power, multiples – invisible ships which fly and fire in parallel – increased speed, and homing missiles, among others.

Graphicallly, Xenon is very good. Detailed sprites and excellent backdrops ranging from Uridium-esque metallic backgrounds to some very weird forms of undergrowth add up to create an excellent graphic effect. Other nice touches include an excellent animated digitised face in the right hand side control panel.



The faster vertically flying aircraft

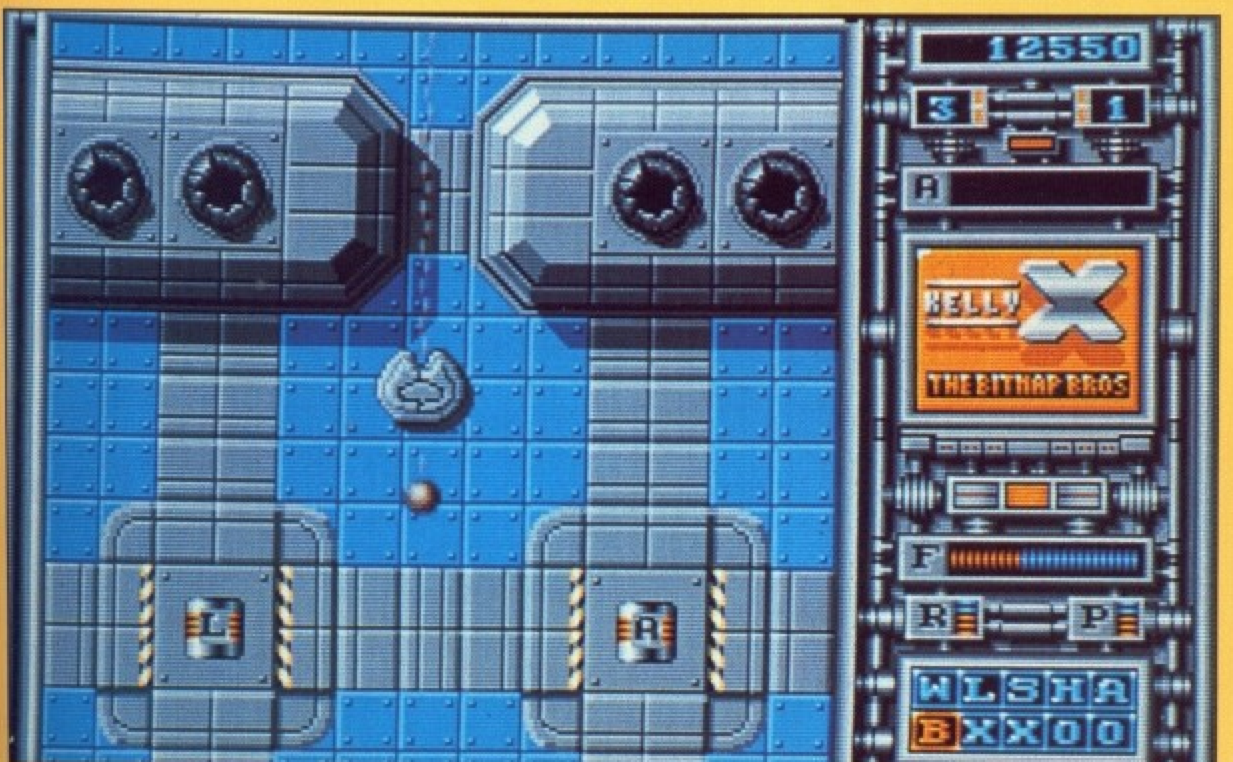
The animation, too, is up to standard with smooth scrolling and very little juddering or slowing of the screen, even when the game gets very frantic – and very frantic it certainly does get.

One thing that did not really impress me was David Whittaker's music. He has been at the forefront of Commodore 64 music for some time now, but this – which I suspect may be his first commercial Amiga soundtrack – is not quite up to scratch. Sure it's fast and thumping, but when you consider what the Amiga is capable of...

The right hand control panel of the game (apart from the game logo) is used to display the amount of fuel remaining. Each time you are hit by one of the baddies this fuel reserve diminishes until, when you have nothing left, a life is lost. More fuel is, however, available each time you complete a level.

Xenon is a good, fast, exciting and enjoyable shoot-'em-up. It hardly drains the brain, but then that's not what it is supposed to do. Unfortunately, it provides little if anything that you can't get for half the price in Sidewinder. If however, you already own Sidewinder and are looking for something the same, Xenon's for you.

Francis Jago



The ground-based multi-directional tanks in action

Xenon
£19.99
Melbourne House

Sound
Graphics
Gameplay
Value

Overall – 70%

TETRIS



SIMPLE games are often the most addictive. Tetris is a 3am, just one more game, unbearably addictive product. It was devised and written for the PC by Vagim Gerasimov, a Russian computer programmer.

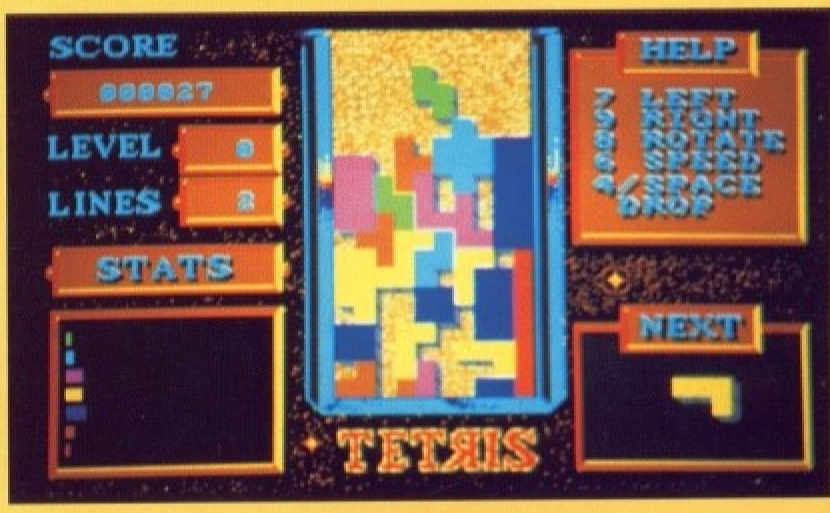
Of course he didn't write the Amiga version – Russian's aren't allowed anything as high tech as a 68000, let alone the custom sound and graphics chips. The Amiga version was written by John Jones Steele, who has plastered his name all over the high score table to make sure you don't forget.

The idea is to interlock shapes. Each is made of four cubes. The cubes joined end to end make a brown stick. Three cubes in a line with one on the side at the bottom form a purple L. If the one on the side is at the top the shape is yellow and if all four cubes are joined together they make a big blue cube. Two staggered rows of cubes are either cyan or green, depending on orientation.

The shapes are dropped down the screen one at a time. You can shift them sideways or rotate them. The idea is to make all the tiles interlock so that there is a solid row across the full width of the playing area. When this happens the row disappears. If you leave a gap the shapes build up the screen. The game ends when the shapes have built up to the top.

As the shapes build up you have less space and consequently less time in which to manoeuvre the new shape into place. As you get better the game moves up through levels, faster and harder each time.

The graphics, credited to Dennis Harris, are contrasting. The sparkling mottled background is interesting, and can be frozen, making the gaps easier to see. The picture of the Kremlin in the snow is beautiful, but the actual tiles are just a single colour with a badly done 3D shadow.



There is not much scope for sound effects, but the background tune, by David Whitaker is haunting, and although not very long is atmospheric and does not become irritating.

There are some games I play, enjoy and review. There are others that I come back to every so often.

Kathryn Daniels

Tetris
£19.95
Mirrorsoft

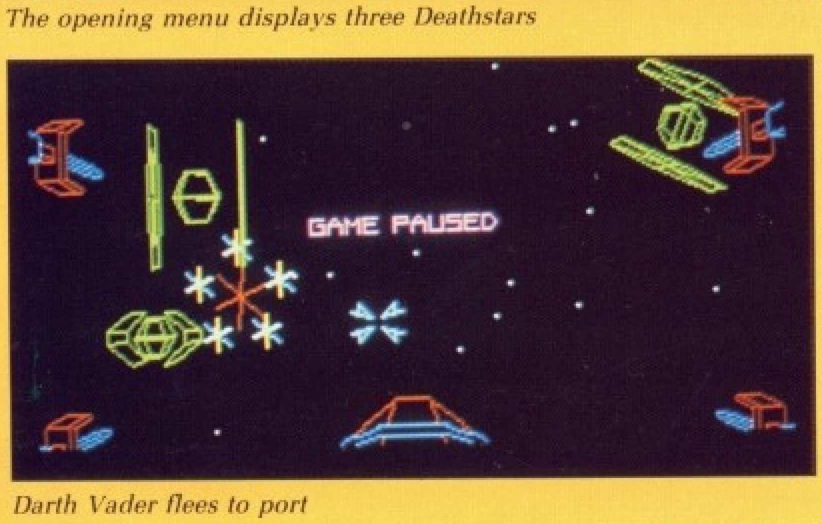
Sound
Graphics
Gameplay
Value

Overall – 70%

STAR WARS



The opening menu displays three Deathstars



Darth Vader flees to port

WAS it really 10 years ago that audiences around the country gasped in astonishment as an enormous spaceship trundled overhead, heralding the start of a film that was destined to become a milestone in cinema entertainment?

Star Wars is a game of three sections and three skill levels. The opening menu displays three Deathstars, each representing the game at progressiveley later stages. The higher skill levels net a big bonus if the mission is a success, and contain all the major elements on the first run.

Control is either by joystick, which is so sloppy as to make it useless, or mouse. Use it to move the laser sights around the screen and blast away at the Empire ships and, if you see him, Darth Vader. You may not be able to destroy Darth's ship but you do get a decent bonus for every hit inflicted on it.

While the defenders along the sides snipe away, most of your attention is taken up with the catwalks that stretch across in front of you.

Duck, dodge and dive to stay alive to the end where one well placed shot down the exhaust port will signal the beginning of the end for the giant battleship. It is only this section which presents any real difficulties. As well as being a gunsight, the on-screen marker also serves to control the ship's horizontal and vertical movement.

The upshot is that if you are flying along the bottom of the trench and a couple of fireballs are coming your way and you raise the sights to shoot them, the ship inevitably lifts off as well – usually smack into a catwalk.

Star Wars is entertaining enough, and quite exciting in the trench sequence, but it does become rather repetitive before long.

For 10 minutes of adrenalin pumping action it's worth rolling back the years giving old Darth Vader a run for his money.

Mark Luckman

Star Wars
£19.95
Domark

Sound
Graphics
Gameplay
Value

Overall – 70%

SIDEWINDER

MASTERTRONIC'S Arcadia project, in which games developed for its arcade consoles are converted into home computer formats, is well known after its successes with Roadwars, and particularly Xenon.

What many of the people who hail this project as a wonderful idea fail to appreciate is that with the arcade games being developed on a two or four meg Amiga, they are barely of arcade quality standard at best.

Not that it is any particular fault of the Amiga, it is quite capable of delivering the goods. More that the programmers simply haven't come up to scratch. Sure Xenon was a nice game, but that was the best of the bunch and you would hardly feed a coin-op shoot-'em-up which only used around 60 per cent of the screen.

That's all about to change right now though, in a game that gets zero marks for originality and more importantly, top marks for all out action.

The name of the game is Sidewinder, and for the astonishingly low price of only £10 you can equip your Amiga with one the best pieces of non-stop destruction ever.

It all starts with a pounding tune playing over what appears to be a digitised picture of the inlay card. This provides the mission briefing.

A galactic war has ground to a halt with lines of spacecraft facing each other across the cosmos. Suddenly, flying out from the enemy ranks, appears a ship the size of a planet. The Star Killer is here and is heading for Earth.

Subtlety isn't part of its armament, as its primary function is to divebomb the sun in a system, sending it supernova, crisping everything else in sight.

Nothing can stop this monstrosity. Or can it? As with all the best sci-fi movies, it is noted that a single seater spacecraft could penetrate the docking system and live long enough to destroy the control level, an act calculated to bring about the destruction of the ship before it reached Earth.

In order to get to the control level you have to fight your way through the water distribution level, the hydroponics, the residential, the flight deck and the command level.

The whole point of this waffle is that the scenery for each level corresponds to its function. Thus the water distribution level, the first in fact, is very watery with steel grey platforms, tanks and barrels.

The ground defences arrayed against you are also appropriate so that on the first level you are facing pill boxes on legs set in the water.

The hydroponics level features robotic gardeners who lob missiles towards you, and lots of flora and brown earth from which snipers appear, fire, then disappear underground again.

The residential area contains lots of cream coloured towers and interconnecting pathways, as well as giant gun emplacements.

The graphic designs are excellent, but fall down in one area; the airborne defenders that you have to contend with are uninspiring, to say the least. While they do occasionally swirl around in pretty patterns, the ships are fairly dull. Not that you've got that much time to watch them.

Surprisingly, after Xenon anyway, Sidewinder is a full screen vertical scrolling game with some measure of lateral movement in the style of Flying Shark. The scrolling is very smooth, if not particularly fast, but it doesn't have to be for this type of game.

Best of all though are the explosion



On a one-man mission to bomb the sun

and accompanying sampled sound effects. As there are a great many ground-based targets, usually packed together, the effect can be amazing as you strafe them, see the glowing explosions and listen to the noise reverberate from the monitor's speaker.

At full belt it's like something out of a Rambo film. I just love blasting the long strip of fuel drums on level one

Initially your firepower isn't too high powered, so thank goodness for the another feature of Sidewinder. Periodically goodies float down the screen in the form of lettered boxes. Rapid fire, power shots that enable targets to be destroyed with a single missile, invulnerability and a hover facility can all be had for around 15 seconds before the effect wears off.

The hover function really only comes into its own when you reach the final, control level, as it stops the screen from scrolling – essential if you are to fulfil the mission brief of destroying everything on that level.

If you have an auto-fire joystick flick that switch and indulge in an orgy of apocalyptic annihilation.

If you found that Xenon got too hard too soon then Sidewinder's five skill levels will be all the more welcome. Add to that the fact that this game is a shrine to wanton destruction, the entrance charge is only £10, and you have a brilliant, all-action experience.

Mark Luckman

Sidewinder
£9.95
Mastertronic

Sound
Graphics
Gameplay
Value

Overall – 70%



Full price graphics at a budget price

BONE CRUNCHER



BONO, lateral thinker, rock hero and of late a flatulent green monster, spends his time gathering skeletons to make soap. The castle where all this saponification goes on bears a striking resemblance to Hampton Court – yup, another maze game.

The variations on this tired old theme can be counted on the fingers of a 99 cone; there are various monsters which, when released by Bono digging out the surrounding earth, kill their liberator.

There are glooks, round hairy pink things with eyes that periodically hurtle around the screen. There's the odd spider. Um.

There is the faintest suspicion of a plot. Collect five skeletons, bump into a cauldron, and Bono gets a bar of soap. Proceeding to a nearby stairway results in a large seamonster getting the soap, and Bono getting about 15 seconds to secrete himself somewhere safe before the glooks wake up and, en masse, migrate across the castle.

This may (or may not) open up another passageway through which Bono can find another five skeletons, another cauldron, and another monster engaged in its personal toilet.

The correct sequence of moves has to be worked out for each new screen. These start off fairly simple, but soon turn into some real brain-numbing "if I release the glook then it will float up and block the monster that's guarding the key" stuff.

There then follow some situations which appear impossible, and as the only way to escape when trapped by glooks is to restart the game (there's no time limit, and no way to bump off Bono to start from another position with a new life) these can be severe tests of patience.

The square areas of earth that vanish when Bono walks through them are irresistibly reminiscent of Boulderdash. So is the trick of pushing glooks around to reveal exits.

The glook volcanoes that spew forth an infinite number of monsters are straight out of Gauntlet, as is Fozzy – a toad/bear creature that Bono can release. Foz just blunders around, and occasionally blocks a rampaging glook. The graphics wouldn't stretch a Commodore 64. And crime of crimes – the screen flickers occasionally.

Sound consists of some short guitar/synth/drum samples concocted into a repetitive tune, as sponsored by the manufacturers of volume controls.

The game commits two crimes for which the programmer should be shot. When you die a screen displays a message which reads "one life's gone" and the program does not display the sea monster on a machine which has more than 512k.

The first problem can be fixed with a disc sector editor – and it is annoying enough for me to want to do it. The second problem can be fixed by altering the bootstrap. If I wanted to spend my time fixing Superiour's bugs I'd apply for the job.

What can I say? Avoid is a good word.

Rupert Goodwins

Bonecrusher
£14.95
Superior Software

Sound
Graphics
Gameplay
Value

Overall – 33%

GEE BEE AIR RALLY

STEVE Cartwright's Gee Bee Air Rally (GB from now on), is one of the first Amiga releases from Activision to really feature animation heavily.

Previous games have offered pretty pictures, but lacked animation. GB is an arcade flight simulator which combines the flavour of a flight simulator with the joystick-bashing action of a true arcade game.

The plane is easy to control, leaving you to test dexterity rather than intimate knowledge of racing aircraft.

The game's storyline is set in the 1930s, and sees you playing Johnny "Little John" Daring, America's greatest pilot. In this persona you must race a plane (the Gee Bee in the game's title) around a pylon-marked 100 mile course.

The single-winged propellor driven monster has been designed for one thing only – to fly as quicky as possible around a course. It has very short wings, a huge engine, and a massive amount of petrol. To make matters worse, you sit right on top of the engine.

The plane is capable of covering the 100 mile course at an average of more than 250 miles per hour – but only if you are a top quality pilot.

Fly around the course as quickly as possible, avoiding all the other competitors, and leaving pylons to the left and right, rather like skiing.

After you complete a series of these courses you are presented with a couple of time trials. The most common is balloon-popping, flying at a perilously low height popping balloons with your wing tip.

The balloons are laid out in a trail, but they are mixed with signposts which will damage your aircraft should you hit one. If you fail to pop enough balloons in the alloted time, your game is over.

If during any part of the game you fail to complete a section, or crash into one of the many other planes, you parachute to land. This is displayed by a huge parachuting aviator with appropriate sounds.

The final screen shows you either in a pile of manure, or facing an attractive pair of legs in a barn.

The player's view is that from above and behind the plane you control, but although the machine is nicely drawn, it is still a little inaccurate, particularly when you are supposedly flying at 250 mph.

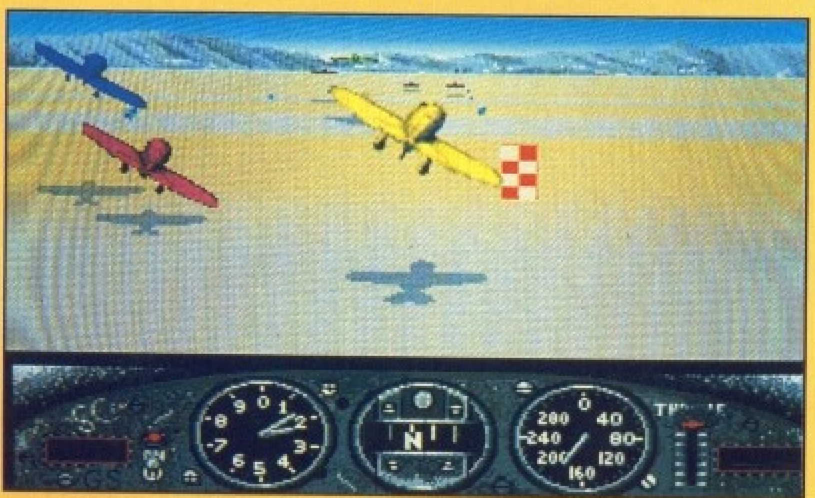
The biggest problem with GB, however, lies not the graphics or sound, but the gameplay, or rather lack of it. Although there are levels of play, the game is quite simply too easy. And not only is it too easy, it is – after only a matter of minutes – rather dull.

In many respects this is little more than Pole Position in mid-air, and Pole Position is a three year old game.

GB falls down because it is a conversion. On the 64, the programmer could probably only get so much into the computer's memory. With 512k of Amiga to play with, however, the game should have been considerably better than this.

The idea is there for a good game, the packaging and instructions are excellent, but at £24.95, GB is overpriced and under-developed.

Francis Jago

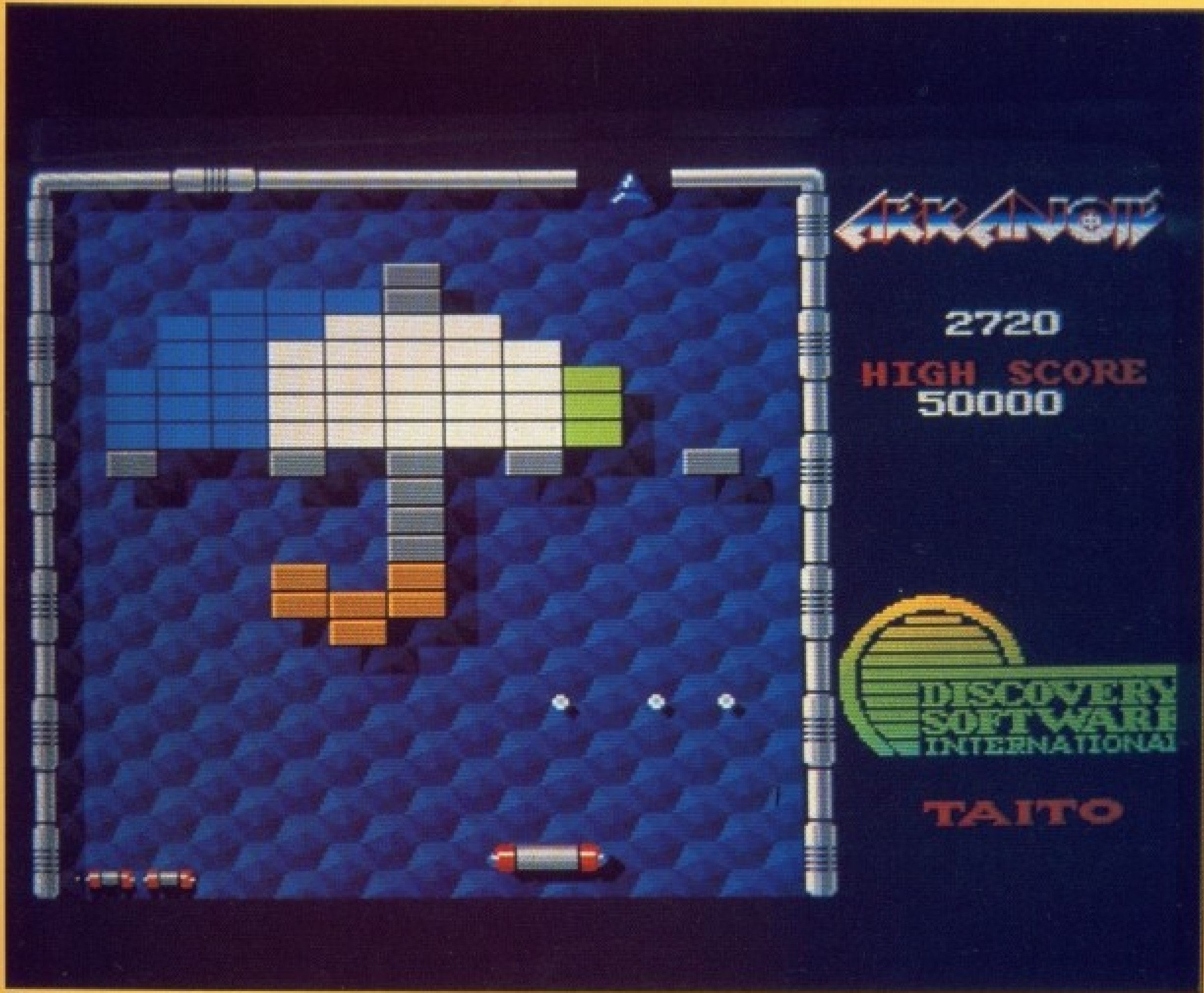


Gee Bee Air Rally
£24.95
Activision

Sound
Graphics
Gameplay
Value

Overall – 55%

ARKANOID



The Disruptor: Three balls with which to juggle and do a lot more damage

ONLY the Japanese could take what is essentially a game of Breakout and add a plot. Apparently you were cruising along in the spaceship Arkanoid when the ship was destroyed.

You scrambled to safety but were captured in space by someone. Of course it isn't that simple. The time and era of the story are unknown.

Someone ought to point out to the authors that time and era are the same thing. They should also point out that it is impossible to escape from the mother ship after it has been destroyed because firstly you would be destroyed with it and secondly it is paradoxical to leave something which doesn't exist anymore.

OK, I pretend to hear you say, but what about the game?

Arkanoid thinks that it is an arcade machine. It isn't far wrong. The conversion is by Discovery Software, infamous for the Marauder bit copier.

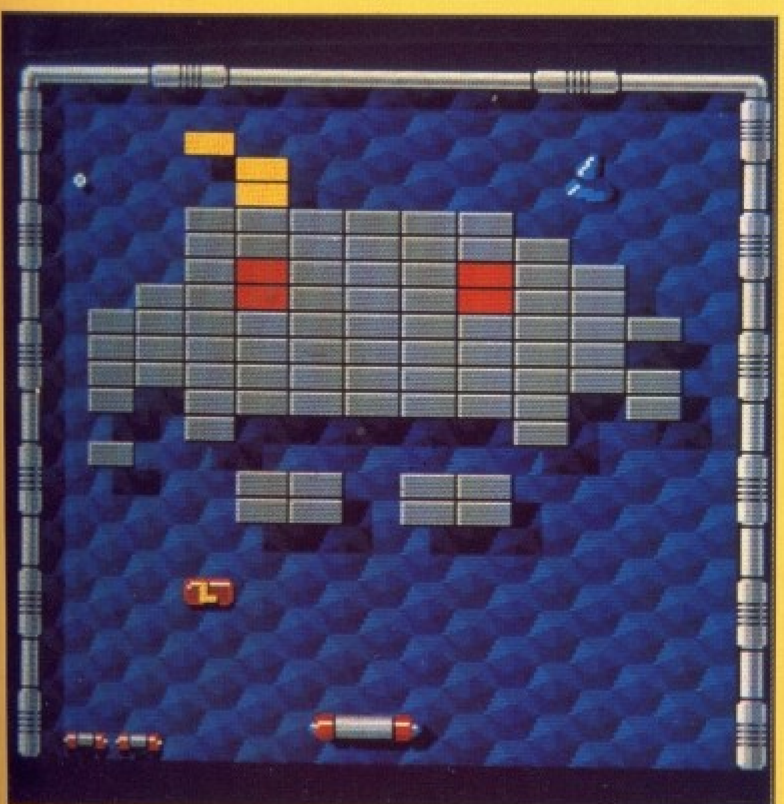
If it wasn't for the Discovery logo showing off with copper lists it could be passed off as a Taito product. The arcade identity extends to an insert coin (what, in the disc drive?), message and a number of credits. In ye olde arcade tradition one or two (alternate) players can be accommodated.

The coin guzzler obviously had a load of spare memory left when the program was complete. This is used to display the spaceship Arkanoid. True to form, the game includes the scene, but when you have played the game a few times it starts to grate.

In a slight deviation from the arcade original you can select any of the first 20 levels from which to start. That's great since level three can be a real pig.

The graphics are superb. The backgrounds and the shadows look identical to those on the Taito machine, the sounds are identical. But when all is said and done, Arkanoid is a Breakout clone and Atari (boo, hiss), inventors of Breakout, has taken Taito to court over this.

You bounce a ball off a bat, which in a desperate attempt to hold the plot together is the Vaus spaceship you escaped in. The ball hits bricks which disappear. Destroy all the bricks to finish the sheet.



In an attempt to persuade the coin-dropping community of the world that this is not a Breakout rip-off there are some neat features. Grey bricks need to be hit more than once, copper coloured ones cannot be destroyed but make it harder to get at the ordinary bricks behind them.

Ordinary bricks can contain bonus cylinders which roll down the screen and offer extra facilities for the player.

These include a twin barrelled laser, a sleeping tablet which slows the ball down, a catch pod which will let you hold the ball to aim it at a brick, and an expander which gives you a fat bat.

Then there is a disruptor which gives you three balls with which to juggle and do a lot more damage, a bonus which sucks you through a hole on to the next screen and an extra life.

You can have as many extra lives as you like, but only the first five will be displayed. A minor problem is that the laser looks as though it fires two shots, but if one hits a block they both stop.

Having battled, bounced and shot your way through 32 sheets you are confronted by Doh, a large head which spits sheets of metal at you.

You retaliate by bouncing the ball back. Each time the ball hits the head weakens. But if you get hit by the metal or miss the ball the head returns to full strength.

Eventually the head flashes, turns blue and fades to black. You have won.

The game returns to the picture of the stationary spaceship and prints out the message "Dimension controlling fort DOH has now been destroyed and time started flowing reversely. Vaus managed to escape from distorted space but the real voyage of Arkanoid in the galaxy has only started . . ."

When all is said and done this is still Breakout, but that does not detract from its being a very playable game.

Kathryn Daniels

Arkanoid
£24.95
Discovery

Sound
Graphics
Gameplay
Value

Overall – 75%

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AMIGA COMPUTING

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to Amiga software and hardware

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DBF/Access File Manager	Desktop Ai	$195.00	Dbase III/DBF and MDX files; single user
dbx	Desktop Ai	$550.00	Database to C translator
dbx Library Source	Desktop Ai	$750.00	Library source for Unix/Xenix and PC/AT
dbx Library Source	Desktop Ai	$400.00	Library source for PC/MSdos
dbxPort	Desktop Ai	–	Expanding database beyond PC limits
Home Industry Manager	SunSmile	–	Home inventory for insurance purposes
K-Data	Kuma	£49.95	Intuition based database
Microfiche Filer	Amiga Centre Scotland	£69.00	Database including graphics
Omega File	Robtek	£49.95	Budget database
Organize	Brown-Wagh	$79.95	File manager
Softwood File IIsg	Brown-Wagh	$99.95	Database with sound and pictures
Superbase Personal	Precision	£99.95	Easy to use database
Superbase Professional	Precision	£249.95	Intelligent forms editor and report generator
Video Cataloguer	SunSmile	£29.95	Home VCR tape collection

DESKTOP VIDEO

PRODUCT	COMPANY	PRICE	DESCRIPTION
Aegis Animator	Brook	£90.00	Animation software
Aegis Video Titler	Amiga Centre Scotland	£99.00	Title generation and presentation software

PRODUCT	COMPANY	PRICE	DESCRIPTION
Aegis Videoscape 3D	EPP	£125.00	3D animation package
Deluxe Productions	Electronic Arts	£149.00	16 colour hi res graphics animation
Deluxe Video 1.2	Electronic Arts	£69.95	Video presentations and rock videos
Forms in Flight	Amiga Centre Scotland	£60.00	3D drawing and animation
Genlock	Aquatic	£264.00	Video/graphics genlock
Pro Video	Brook	£156.48	Video titling
Pro Video CGI	EPP	£149.00	Professional titling
Provideo	Brook	£156.48	Video titling
Sculpt 3D	EPP	£67.00	3D graphics generator
TV/Show	Brown–Wagh	$99.95	Slide show generator
TV/Text	Brown-Wagh	$99.95	Character generator
Video Titler	Burocare	£96.00	Video titling

DTP

PRODUCT	COMPANY	PRICE	DESCRIPTION
Citydesk	Taurus Impex	£99.95	Postscript compatible DTP
Fontset 1	Gold Disk	$34.95	Eight typefaces to use with PageSetter
PageSetter	Gold Disk	–	Entry-level desktop publishing program
PageSetter Hyph Module	Gold Disk	$29.95	PageSetter auto insert; discreet hyphens
PageSetter Laserscript	Gold Disk	$44.95	Install Postscript compatibility
Professional Page	Gold Disk	$95.00	DTP integration of text
Publisher Plus	Brown-Wagh	$99.95	–
Publishing Partner Prof.	Soft-Logik	£199.95	–
Shakespeare	Burocare	–	Colour desktop publishing

EDUCATION

PRODUCT	COMPANY	PRICE	DESCRIPTION
Abraham, Friend of God	MicroEd	$29.95	Religious education
Adam and Eve	MicroEd	$29.95	Religious education
Basic Grammar	MicroEd	$29.95	Teaches to identify nouns, verbs, adverbs etc.
Beginning Reading Skills	MicroEd	$89.95	Provides children with word skills
Bridge 5.0	Artworx	$34.95	Complete bridge playing program
Capitalisation	MicroEd	$29.95	Teaches how to capitalise words
Doug's Math Aquarium	Amiga Centre Scotland	£58.00	Graphic display of math functions
Early Math	MicroEd	$49.95	Basic mathematics package
In the Beginning	MicroEd	$29.95	Religious education
In the Promised Land	MicroEd	$89.95	Religious education
Intellkype	Electronic Arts	£24.95	Typing tutor
Learning the Alphabet	MicroEd	$29.95	Program for children learning the alphabet
Linkword Languages	Artworx	$29.95	Effective way to learn a foreign language
Medal Winner	MicroEd	$29.95	Fun mathematics package
Pinball I.Q.	MicroEd	$29.95	Mathematics using a pinball machine
Planet Probe	MicroEd	$29.95	Space simulation teaching planetary system
Punctuation	MicroEd	$29.95	Teaches how to punctuate correctly
Social Studies Vocabulary	MicroEd	$29.95	Lessons to develop vocabulary
Spelling	MicroEd	$29.95	Speech and screen printed text
Spelling Detective Game	MicroEd	$39.95	How to spell frequently misspelled words
Story of the Good Samaritan	MicroEd	$29.95	Religious education
Sum-It Mountain	MicroEd	$29.95	Fun maths package

PRODUCT	COMPANY	PRICE	DESCRIPTION
The First Christmas	MicroEd	$29.95	Religious education
Vocabulary Series	MicroEd	$49.95	High level lesson in vocabulary
Word Demons(Usage)	MicroEd	$29.95	Deals with troublesome homonyms and verbs

GAMES

PRODUCT	COMPANY	PRICE	DESCRIPTION
3D Helicopter	Sierra-on- Line	£19.99	Flight simulator
Adventure Construction set	Electronic	£14.95	Construction with graphics and sound
Alien Fires-2199AD	Paragon	$39.95	Science fiction role playing
Alien Strike	Robtek	£19.95	Scrolling action
Animator VHS	Amiga Centre Scotland	£25.00	Introductory video to animator apprentice
Arazoks Tomb	Burocare	£31.00	–
Arcade classics	Robtek	£19.95	Three games
Barbarian – Ultimate Warrior	Palace	£19.99	Hack-'n-slash combat game
Beyond Zork	Infocom	£24.99	Classic text adventure revisited
Black Jack Academy	Microillusions	£24.99	Black Jack for up to four players
Black Lamp	Firebird	£19.95	Arcade game
Bonecruncher	Superior	£14.95	Arcade adventure with strategic puzzles
Brainstorm	Robtek	£9.95	Computerised board game
Bubble Bobble	Firebird	£19.95	Coin-op conversion of popular game
Bureaucracy	Infocom	£24.99	Douglas Adams adventure
Centrefold Squares	Artworx	$29.95	Digitised graphics in adult oriented game
Championship Backgammon	Robtek	£9.95	Board game
Championship Baseball	Activision	£19.99	US Baseball simulation
Championship Golf	Activision	£34.99	With real world championship holes
Diablo	Robtek	£19.95	American arcade
Dream Zone	Baudville	$49.95	Graphic adventure
Express Paint	Brown-Wagh	$99.95	Paint program with Postscript
Faery Tale Adventure	Microillusions	£29.99	Scrolling role playing game
Firepower	Microillusions	£19.99	Two player tank duel
Formula One Grandprix	Tynesoft	£19.95	Car racing game
Frostbyte	Tynesoft	£14.95	Converted from a 64 hit
Galactic Invasion	Microillusions	£19.99	Two player space battle
GBA Basketball	Activision	£24.99	–
Gee Bee Air Rally	Activision	£19.99	Air race with challenges
GFL Championship Football	Activision	£24.99	American grid iron football
Golden Path	Firebird	£19.95	Arcade adventure set in the Orient
Guild of Thieves	Rainbird	£24.95	Adventure game
Hitchikers Guide to the Galaxy	Infocom	£24.99	Famous space adventure
Hollywood Poker	Robtek	£19.95	Strip poker with artwork girls
Hunt for Red October	Grandslam	£29.95	Ultimate submarine combat simulation
Jewels of Darkness	Rainbird	£19.95	Adventure compilation
Jigawania	Robtek	£9.95	Four puzzles
Jinxter	Rainbird	£24.95	Magnetic Scrolls adventure
Kings Quest 3-Pack	Sierra-on-Line	£24.99	–
Kings Quest I	Sierra-on-Line	£19.99	–
Kings Quest II	Sierra-on-Line	£19.99	–
Kings Quest III	Sierra-on-Line	£19.99	–
Knight Orc	Rainbird	£19.95	Graphics interactive gameplay
Kwasimodo	Robtek	£9.95	Tricky arcade
Leaderboard	US Gold	£24.95	Legendary golf simulation
Leaderboard Tournament	US Gold	£9.99	Gives extra courses
Leather Goddesses of Phobos	Infocom	£24.99	Spoof sci-fi adventure on Mars
Leisuresuit Larry	Sierra-on- Line	£29.99	Soft porn adventure with graphics
Lurking Horror	Infocom	£24.99	Chilling horror adventure

PRODUCT	COMPANY	PRICE	DESCRIPTION
Master Ninja	Paragon	$34.95	Martial arts action arcade game
Moebius	Microprose	£24.95	Oriental role playing game
Mousetrap	Tynesoft	£24.95	Platform style game
Nord & Bert	Infocom	£24.99	Joke adventure
Ogre	Microprose	£24.95	Strategy game from Origin
Othello	Robtek	£9.95	Computerised board game
Out of the Blue	Paragon	$44.95	Fantasy role playing adventure
Plundered Hearts	Infocom	£24.99	Mills and Bon style adventure
Plutos	Tynesoft	£24.95	Scrolling shoot-'em-up
Police Quest	Sierra-on-Line	£19.99	–
Portfolio Gold Checker	MDR Interfaces	£12.99	Checks The Times Portfolio results
Ports of Call	Burocare	£34.74	–
Return to Atlantis	Electronic Arts	£24.95	Underwater adventure
Rocky	Robtek	£9.95	–
Rolling Thunder	US Gold	£24.95	Action game
Romantic Encounters	Microillusions	£24.99	–
Second's Out	Tynesoft	£19.95	Boxing game with six contestants
Sentinel	Firebird	£19.95	Strategy 3D game
Shanghai	Activision	£19.99	Ma Jong patience
Sherlock	Infocom	£24.99	Text adventure
Silent Service	Microprose	£24.95	Simulation of World War II submarines
Silicon Dreams	Rainbird	£19.95	Trilogy of Level 9 adventures
Space Quest	Sierra-on-Line	£19.99	–
Space Quest II	Sierra-on-Line	£19.99	–
Starglider	Rainbird	£24.95	Space shoot-'em-up
Starways	Robtek	£19.95	Classic shoot-'em-up
Station Fall	Infocom	£24.99	Adventure in space
Stellar Conflict	Brown-Wagh	$39.95	Strategy game
Stockmarket	Taurus Impex	£19.95	Strategy simulation
Strip Poker Data disc 4 and 5	Artworx	$29.95	Additional opponents for Strip Poker
Strip Poker II	Artworx	$39.95	New version of classic program
Test Drive	Electronic Arts	£24.95	Car racing game
The Pawn	Rainbird	£24.95	Classic adventure
Thexder	Sierra-on-Line	£19.99	Transformer robot game
Time & Magik	Mandarin	£19.95	Three interactive adventures from Level 9
Ultima III	Microprose	£24.95	Fantasy game
Video Vagas	Baudville	$34.95	Four casino games
Winter Games	US Gold	£24.99	Combination of testing events
Winter Olympiad 88	Tynesoft	£19.95	Multi event challenge
Wizard Wars	Paragon	$34.95	Graphics and text adventure
Wordplex	Brown-Wagh	$34.95	Word game
World Games	US Gold	£24.99	Epyx compilation

GRAPHICS

PRODUCT	COMPANY	PRICE	DESCRIPTION
Aegis Draw- Plus	Burocare	£173.00	Calc package
Aegis Images	Brook Computers	£25.00	Painting software
Analytic Art	Crystal Rose	£49.00	Mathmatical art program
Animate 3D	Burocare	–	Ray-tracing animation
Animator/Images	Burocare	£90.00	–
Art Gallery 1	Unison World	–	Additional graphics
Art Gallery 2	Unison World	–	Additional graphics
Art Gallery Fantasy	Unison World	–	120 fantasy graphics
Art Parts Volume 1	Electronic Arts	£9.95	Data disc – over 175 colour images
Art Parts Volume 2	Electronic Arts	£9.95	Data disc – over 100 brushes

PRODUCT	COMPANY	PRICE	DESCRIPTION
Butcher 2.0	Eagle Tree	$37.00	Graphics utility and conversion program
Cherry Graphics Tablet A3	Taurus Impex	£549.00	A3 digitiser for use with Cad
Comic Art Series	Gold Disk	$34.95	Two-disc sets plus Comic Setter clip-art
Comic Setter	Gold Disk	$99.95	Complete colour Comic design studio
Deluxe Paint II	Electronic Arts	£69.95	Graphics tool for hobbyists and professionals
Deluxeprint	Electronic Arts	£24.95	Prints calendars, cards, stickers and posters
Digipaint	Burocare	£49.5)	Colour paint package
Director	Amiga Centre Scotland	£47.00	Desktop animation package
Express Paint	Amiga Centre Scotland	£58.00	Painting/DT graphics
Eye Playz	Silver Software	$19.95	Interactive or automatic graphics routines
Flicks-fixer board	Taurus Impex	£399.00	Flicker correction card
Imprint	American Liquid Light	$495.00	Interface for Polaroid Palette image film recorder
Intro CAD	Precision	£59.95	Introductory Cad high quality output
Pixmaark	Precision	£49.95	Professional image enhancement
Plot-to-Print Converter	Hi-Tech graphics	$35.00	Converts HPGL plots to high-res.; printer output
Print Master Plus	Unison World	$49.95	Creates signs
Sculpt 3D	Burocare	–	Ray-tracing drawing
Seasons and Holidays	Electronic Arts	£9.95	Art for every occasion
Videoscape 3D	Amiga Centre Scotland	£125.00	3D modelling
Weave-It	Joyce I Peck	$74.95	Weaving drawdown program
Weave-it Plus	Joyce I Peck	$89.95	Weaving drawdown program plus utilities
X Cad	Taurus Impex	£399.95	Professional 2D design and drawing package

INTEGRATED

PRODUCT	COMPANY	PRICE	DESCRIPTION
Benchwork Module	Avant Garde	$199.95	Integrated editor, compiler and linker
Customer File	Clockwork	£400.00	Handles up to 5,000 customers
The Works	Brown-Wagh	$199.95	Word processor, spreadsheet, organiser
Wizzard	Aquatic	£400.00	Database with word processor/comms/scheduler

MIDI/MUSIC

PRODUCT	COMPANY	PRICE	DESCRIPTION
Audiomaster	Burocare	£40.00	–
Deluxe Music construction set	Electronic Arts	£69.95	Music construction tool for beginners
Drum Studio	Robtek	£39.95	Midi-drum synthesiser package
Hot and Cool Jazz	Electronic Arts	£9.95	Data disc – over 40 tunes
Instant Music	Electronic Arts	£24.95	Gives mistake-free music
It's only Rock'n'roll	Electronic Arts	£9.95	Data disc – 8 eras of rock
Midi for Amiga	Skyles	£49.95	Midi interface for A500, A1000
Midi Interface	Eidersoft	–	Midi interface all models
Midi Software	Eidersoft	–	Polyphonic Midi sample sequensor
Music Studio	Activision	£24.99	–
Pro Sound Design Toolkit	Eidersoft	–	Complete program toolkit
Pro Sound Designer	Eidersoft	£79.95	Sound sample system; four channel stereo
Pro Sound Designer Midi	Eidersoft	–	Polyphonic midi sample sequensor
Pro Sound Designer Software	Eidersoft	–	Works with most sound digitisers
S5 Stero	Aquatic	£199.00	Stereo sound sampler
SASCIII	Phoenix	$119.00	Stereo amplifier for Amiga 500, 1000 and 2000
Sonix	Brook	£50.00	Music software

PRODUCT	COMPANY	PRICE	DESCRIPTION
Studio Magic	Amiga Centre Scotland	£69.00	Music and workshop sound
Synthia	The Other Guys	$99.99	Digital synthesiser
Trilog Midi	Burocare	£55.00	Digital Midi interface
Waverform Easel	Silver	$19.95	Creates waveform tables using mouse

WORD PROCESSORS

PRODUCT	COMPANY	PRICE	DESCRIPTION
Beckes Test	Abacus	$150.00	Professional featured word processor
Desktop Vizawrite	Viza	£99.95	Multifont, windowing, plus images, mailmerge
Excellence	Brown-Wagh	$299.95	Professional level word processor
K-Roget	Kuma	£49.95	Disc based thesaurus
K-Text	Kuma	£19.95	Text processor
ProwriteII	Burocare	–	Colour word processor
Scribble	Brown-Wagh	$79.95	–
Text Pro	Abacus	$79.95	Easy to use word processor
Wordperfect 4.1	Sentinec	£199.00	Complete word processor
Zuma fonts-Vol.1	Brown-Wagh	$34.95	Fonts/Swiss/Pica/Barn
Zuma Fonts-Vol.2	Brown-Wagh	$34.95	Fonts/Euro/Stencil/Chelt
Zuma Fonts-Vol.3	Brown-Wagh	$34.95	Fonts/Coop/Script/Fast

SPREADSHEETS

PRODUCT	COMPANY	PRICE	DESCRIPTION
Analyze	Brown-Wagh	$99.95	Spreadsheet with colour graphics
Haicalc	Taurus Impex	£43.43	Large cell area spreadsheet
Logistix	Precision	£99.95	Flexible intuition-based program
Unicalc	Lattice	£79.95	Large processing area, many functions

MISCELLANEOUS

PRODUCT	COMPANY	PRICE	DESCRIPTION
A/C Basic	Absoft	£195.00	Amiga Basic compatible compiler
AC/Fortran	Absoft	£295.00	Ansi Fortran 77 compiler with debugger
Airt V 2 0	Amiga Centre Scotland	£55.00	Icon driven programming language
Amiga Basic Inside and Out	Abacus	$24.95	Book
AmigaDos C	Lattice	$375.00	Complete C programming environment
Amiga for Beginners	Abacus	$26.95	Book
Amiga Machine Language	Abacus	$29.95	Book
Amiga Tricks and Tips	Abacus	$29.95	Book
APL 68000	Micro APL	£99.00	APL programming language
Assembler	Metacomco	£69.95	Professional macro assembler plus utilities
AssemPro	Abacus	$99.95	Complete assembly lang. develop package
Aztec C	Manx	–	C compiler with Unix make.diff and Grep
Benchmark Modula-2	Oxxi	$299.00	Integrated compiler, editor and Linker
Benchmark Modula-2	Oxxi	$99.00	Library of popular C
Benchmark Modula-2	Oxxi	$99.00	Library of typical Amiga routines
Benchmark Modula-2	Oxxi	$99.00	Library of graphic routines
Diskpro + dimmer	Amiga Centre Scotland	£22.00	Disc file compression

PRODUCT	COMPANY	PRICE	DESCRIPTION
Extend	SunSmile	$39.95	Amiga basic extension: 34 new commands
Facc II	Amiga Centre Scotland	£24.00	Floppy disc accelerator
Flipside	Brown-Wagh	$29.95	Sideways printing
Fortran/020	Absoft	£495.00	Fortran 77 compiler/debugger for 68020
Gizmoz	Robtek	£49.95	Essential desktop package – 20 programs
Impart	Burocare	£55.00	–
Info Mat	TW Arnot	£10.00	A4 plastic mats with valuable info files
Kickstart guide to Amiga	Ariadne	£18.95	A4 book – guide to Amiga programming
Kickwork	Amigo	£29.00	Kickstart and workbench
K-Gadget	Kuma	£29.95	Gadget and requester editor
K–Seka	Kuma	£49.95	68000 assembler, debugger and monitor
Lint	Gimpel	$98.00	Diagnostic facility for C programs
Outline	Amiga Centre Scotland	£36.00	Outliner
Pascal	Metacomco	£89.95	ISO validated pascal compiler
Power Windows	Burocare	–	Programmers' utility
Reason	The Other Guys	$395.00	An aid for writers and editors
Shell	Metacomco	£49.95	Enhanced CLI
Toolkit	Metacomco	£39.95	Utility package
XFOR SAD Custom 88	Transport Data	£1800.00	Customs clearance software – Import/Export

HARDWARE

PRODUCT	COMPANY	PRICE	DESCRIPTION
2.0 megram exp.	Robtek	£499.00	Ram unit
20mb hard disc	Precision	£520.87	Internal 20Mb Supra hard disc for A2000
2M	ASDG	$399.00	2Mb of memory for A1000
3.5" disc drive	Burocare	£99.00	External disc drive
3.5" disc drive	Robtek	£169.00	–
3.5" disc drive	Brook	£129.57	External disk drive
32 bit dram boards	Amiga Centre Scotland	£695.00	Dram BD to 32Mb
32 bit sram board	Amiga Centre Scotland	£595.00	Sram 8D to 2Mb
5.25" disc drive	Burocare	£175.00	External disc drive
5.25" disc drive	Robtek	£199.00	Components
68020/68881 CPU	CSA	£1195.00	020/881 for A2000
68020/68881 PGY	CSA	£795.00	020/881 for A500/1000
68030 "over 030" BD	CSA	£495.00	030 Upgrade Bd
698882 Co-processor	CSA	–	16-25MHZ 882 for CSA BDS
A1000 2Mb Memory Board	Micron	–	Power supply, two slot chassis
A1000 Easyl	Anakin	£539.00	Pressure-sensitive drawing tablet
A2000 2Mb Memory Board	Micron	–	–
A2000 drive	EPP	£139.00	3.5" internal floppy drive for A2000
A2000 Easyl	Anakin	£539.00	Pressure-sensitive drawing tablet
A500 2Mb Memory Board		–Micron	Power supply, single slot chassis
A500 Easyl	Anakin	£539.00	Pressure-sensitive drawing tablet
A500 RF modulator	Commodore	£21.73	A500 RF modulator
A500 Subsystem	Argonout	£249.00	Expands A500 to use A2000 cards
Alegra	Access	–	Memory expansion unit for Amiga 1000
Amiga 1010	Commodore	–	External disc drive
Amiga 1084	Commodore	–	Colour monitor
Amiga 2000	Commodore	–	–
Amiga 2088	Commodore	–	Bridge board
Amiga 500 Colour Business Pack	Commodore	–	–
Amiox	Aquatick	£399.00	Multi-parallel/serial I/O card A2000
ASDG 8Mb expansion	Amiga Centre Scotland	–	Memory board
AX1060/2000	Comspec	£400.00	1 and 2Mb ram for Amiga 1000
BN20	Comspec	£2000.00	Bernoulli box with 20Mb removable media

PRODUCT	COMPANY	PRICE	DESCRIPTION
Burocare hard drive	Burocare	£1695.00	20Mb hard disc drive
CDS 500	Phoenix	£99.95	Replacement power supply for A500
Cherry A3 graphics tablet	Taurus Impex	£549.00	A3 digitiser for use with XCad
Cotron 14" monitor	Taurus Impex	£650.00	Hi-res 14" monitor suitable for XCad
CRP A3	Burocare	£595.00	A3 graphics tablet
CRP A4	Burocare	£360.00	A4 graphics tablet
Digidroid	Burocare	£49.95	Robot filler wheel
DigiPic I	JCL	£299.00	Real time video digitiser. Mono and colour
Digiview	Burocare	£159.85	Digitiser
Disk-2-Disk	Burocare	–	Transfer files from C64/128 to Amiga
Dos-2-Dos	Burocare	–	Transfer files from IBM
Dual RS232+SCSI Hd dsk cont	Scicom	£449.00	Control 8 scsi devices with 2 serial ports
Edit Line	Impact	£1500.00	Off line video editing
Ethonet Board (A2000 only)	Taurus Impex	£549.00	NFS/AFS pier to pier networking
Flickers-fixer board (A2000(b)	Taurus Impex	£399.00	Flicker correction card
Future Touch	Amigo	–	Touch sensitive screen
Gegics	Nucleus	£9750.00	Supervisory control and data acquisition
Genlock	Aquatic	£264.86	Interactive video
Genlock	Burocare	£260.00	Genlock unit
Halfbac-40	CSA	£1595.00	40Mb tape drive
Hard disc drive	Scicom	£549.00	From 20 to 200Mb hard discs
Hard drive	CSA	£895.00	20-80Mb hard drive
Highrise Chassis	CSA	£995.00	A1000 exp chassis
HP Paint Jet	Burocare	£1089.00	Colour inkjet printer
Light Pen and Driver	Inkwell	£129.95	Two-button light pen
Live	A-Squared	£295.00	Video framegrabber for Amiga 100
Live 500	A- Squared	£399.00	Video framegrabber for Amiga 500
MCS 1000	Comspec	£100.00	Connects to IEEE type printers, Amiga and IBM
MCS 6550	Comspec	£200.00	256k centronics parallel printer buffer
MCS 8000	Comspec	£400.00	Multi-user printer
MDR Home control system v3.0	MDR interfaces	£350.00	Complete monitoring and control security
Micron 2Mb memory – A2000	Amiga Centre Scotland	£510.00	Memory board
Micron 2Mb ram upgrade	Scicom	£445.00	2Mb ram expansion
MP-1.3M	Interactive	$255.00	Infra red code learner and transmitter
NEC external 3.5" drive	Precision	£99.95	Floppy drive for A500/A1000
NEC internal 3.5" drive	Precision	£79.95	Floppy drive for A2000
Over Drive	Argonout	£249.00	A2000 hard disc controller and DMA SCSI
PFD-135	Phoenix	£199.95	External 13.5" drive for A500, A1000, A2000
PFD-135I	Phoenix	£149.95	Internal floppy for A2000
PHD 1000/20	Phoenix	£899.00	Hard disc Amiga 1000 40- 60x80mcs
PHD-20	Phoenix	£649.00	22 meg SCSI A500 plus A1000 hard drive
PHD-40	Phoenix	£875.00	48meg SCSI A5000 plus A1000 Hard drive
Printer stand and paper tray	Capri	£9.95	80 column printer stand with paper tray
Pro Sound Designer	Eidersoft	£79.95	Amiga sound sample system 4 channel stereo
Quarter Back	Burocare	–	Hard disc backup
Ram/clock expansion	Eagle	–	Alternative to Commodore A501
RE2000	Comspec	£150.00	Unpopulated 0, 1 plus 2Mb ram board for Amiga 2000
SCSI Controller	Computer	£595.00	SCSI DMA controller card
SD20/40/60	Comspec	£900.00	20, 40, 60Mb hard drives with auto booting
SMI	ASDG	$499.00	8Mb memory for A2000
Tape backup	Amigo	–	20Mb streaming tape backup
Twin- X	ASDG	$329.00	Modular input/output board for A2000
VD3	Burocare	£550.00	Mono framegrabber
VD3+	Burocare	£795.00	Colour video framegrabber
Video Camera	Brook	£199.00	Video camera
Worm 800	Computer	£6995.00	£800Mb laser drive
Zero-meg clock/calender	Skyles	£79.95	With unpopulated ½Mb memory

A

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Suite 150 Austin
TX78759
0101 512 343 4357

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06285 31244

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CA 92121
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The plain man's guide to CLI

What is CLI, and why should you need to know about it? Phil South says you're not using your Amiga properly without it

YOU can't fail to have heard about the CLI or Command Line Interface, if you've had your Amiga for more than an hour. It is mentioned in just about every book and magazine you buy (including this one!) and there is a very good reason for this seeming obsession.

The Command Line Interface is an essential part of the operation of the Amiga, and ignorance of it is ignorance of the machine you've just spent all your money on.

When the Amiga was designed it was decided that it would have a Wimp environment with windows and icons and a mouse to point at them with. But it was too powerful a machine to be limited by just one method of operation. So the CLI was devised to give you a far more conventional text operating system, not unlike CP/M or MSdos, to allow the full use of the multitasking facilities of the Amiga, and to let everyone find their own best way of working, using Workbench, or CLI, or a mixture of both.

There are two official ways of getting into CLI, as well as one undocumented way. The first, and usual method, is to open the system drawer on your Workbench disc and double-click on the CLI icon. The second method is more complex and involves the creation of a CLI system disc. We'll go into that in more detail in a moment.

THE third speedier but dirty way is to boot up your Workbench disc and tap Ctrl+D a few times. The loading of the Workbench will be interrupted with ***BREAK and you'll be dropped into a CLI. You may find some of your AmigaDos commands are not available, but if you're experienced you can just load up the directories you need.

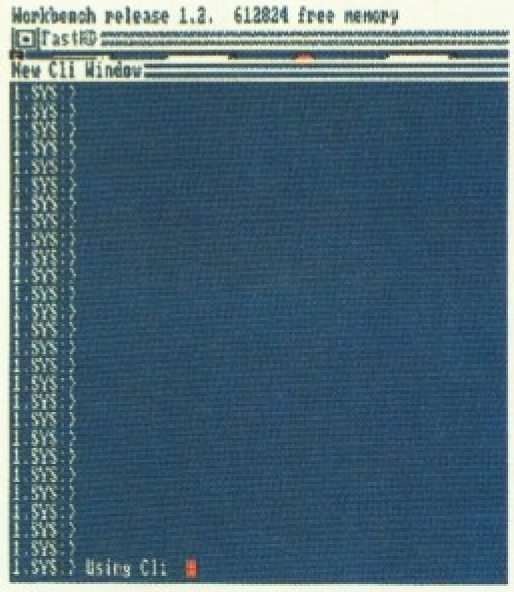
The best method is to have a proper CLI disc that you can just slip in any time you want to do some serious CLIing.

The way to create one is to make a copy of your standard Workbench disc and modify it to open as CLI only. First make a copy of your Workbench disc by opening the Duplicate option on the Workbench menu bar. Then go to the System drawer, open it and double click on the CLI icon to bring up the CLI.

Type ED S/STARTUP-SEQUENCE and press Return. It is important that you use capital letters. This brings up the ED text editor and opens the startup sequence file which auto-executes on bootup. Now press the Escape key. A little asterisk will appear at the bottom of the screen. Press B and your cursor will now be at the bottom of the file on a line which looks like this:

ENDCLI > NIL:

Press the Escape key again, and the D key, and the line is deleted. Now press Escape one last time then press



CLI is your window to the Amiga

X, and the file will be eXited and saved to disc. The write protect tab should be off to do this, so check before saving.

So from now on every time you boot the disc you're dropped right into a CLI. If you want to exit the CLI and go to Workbench at any time, just type ENDCLI and the CLI will be closed, leaving you with the Workbench screen.

What you have just done is to modify the program which sets the computer up so that it doesn't escape from AmigaDos, the operating system of the Amiga, into Workbench, thereby creating a dedicated CLI disc.

There are other things you can delete from S/STARTUP-SEQUENCE, things like the command BindDrivers, which helps coordinate the Amiga's control of non-standard peripherals like hard discs and so on. If you have a standard system with no frills, what's the point of having this in your startup?

Now you have a means of using a CLI as an interface to your Amiga you can use multitasking by opening other CLI windows with the Newcli command. Each new CLI is like a separate computer and will perform tasks for you as you click in it and enter AmigaDos commands.

The number of tasks you can perform and CLIs you can open is limited only by memory. You can examine/run/delete files which have no icons, like a lot of public domain software. Also, being au fait with AmigaDos and CLIs is handy when using professional programs like Aegis' VideoScape 3D and Mimetics' Soundscape, which use the CLI interface extensively.

The best way to learn AmigaDos is through using it. Get a copy of The AmigaDos Manual (Bantam Books) and study it. I can also recommend the Amiga Programmers Guide (Compute! Books) as it has some interesting reference sections and sample programs.

Try using it for routine tasks like copying discs with the Diskcopy command, or initialising them with the Format command. Use it to copy files to other discs, and open up and use the RAM: disc, a useful logical device to which you otherwise have no access.

But most of all enjoy using the CLI. It'll open new worlds, not to mention windows, inside your Amiga.

How to compete with the best

John Carter's Amiga has transformed his video productions

THE visual quality of teaching programmes produced by the Media Services at the Polytechnic of North London has been transformed since we bought an Amiga. Unlike some micros, it has an add-on facility which will allow graphics to be superimposed on to a video picture and recorded on to tape.

Most of our programmes are made on location rather than in a studio; we use a single camera and a portable low-band U-Matic format (semi-professional) video recorder. Each scene is recorded twice, once with the camera positioned to record a general view, then again to record close-up shots.

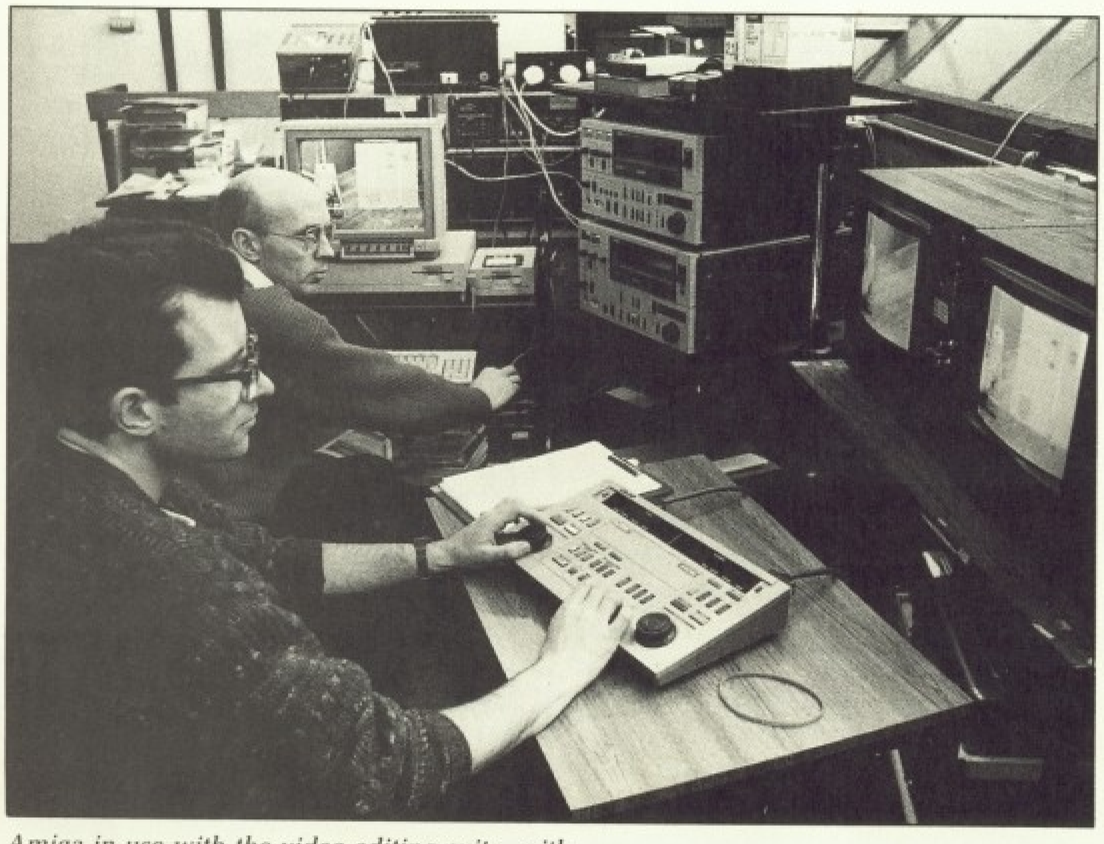
If we were using a film camera we'd be able to cut sequences from the film and "slice" it back together in a different order. On tape we use two special video recorders and a video edit suite to copy selected parts of the two (source) recordings on to a separate master tape for the final programme.

Because you need only small crews and relatively inexpensive equipment, this method of making video programmes is even used by production companies who have the luxury of multiple camera studios. However, it leads to problems when you want to introduce graphics into your pictures.

The simplest way of adding graphics is to point a video camera at some artwork and record it. But this only produces graphics which can be inserted between sections of pre-recorded action. In a programme this slows down the action and it becomes fragmented.

To keep the action flowing we need to superimpose the recorded graphics on to the action. This requires an extra video player and a micro-processor-based special effects generator, items which cost many thousands of pounds.

A video character generator combines these functions. This, too, is microprocessor-based, but can only produce text, albeit in a range of typefaces and sizes. Video character generators are expensive, although the latest models are down to about £2,000 with just one or two typefaces.



Amiga in use with the video editing suite, with John Carter furthest away at the keyboard

TO produce diagrams or other illustrations you need a device such as the Quantel Paintbox as used on broadcast TV. This runs on a powerful minicomputer, and costs tens of thousands.

The Amiga isn't the only computer which can produce text and graphics, so you might ask why micros haven't been applied to this expensive process before. The answer is that if you mix the video outputs of a micro



Text and background generated by TV*Text. Video playing through rectangular window created with colour 0

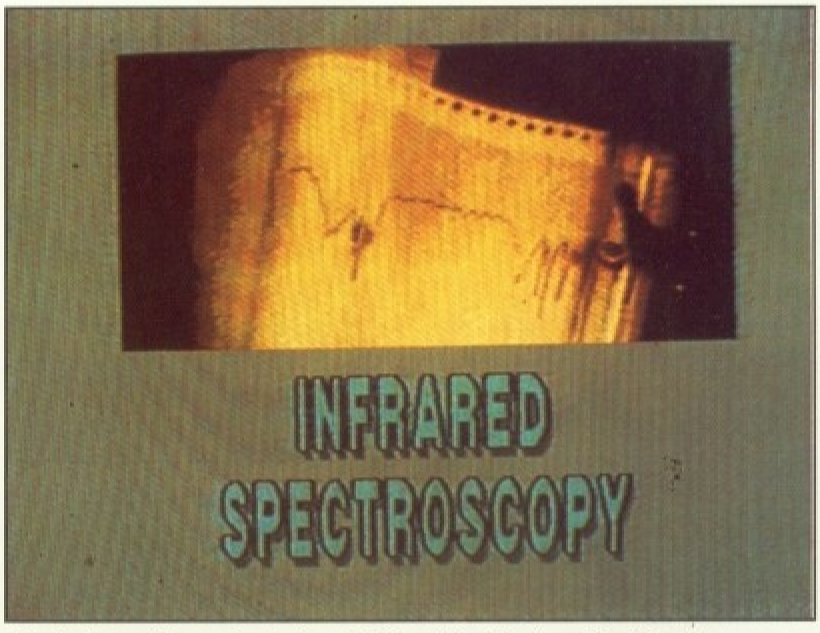


Illustration of graph plotter digitised in black and white by Digiview from still video, coloured then saved on to video tape

and a video recorder you just end up with a dreadful mess on the screen.

To overcome this you need a genlock board, but these aren't easy to design and there's not a very big market for them anyway. The genlock allows the video equipment to decide on frame synchronisation for the computer, which would normally send out the signals when it wanted to.

The genlock we're using with our Amiga is made by Interactive, a small company in Leicestershire. It works by taking part of the video signal from the video recorder and using it as a reference for that from the Amiga, thus allowing the two signals to be synchronised.

Sadly, we didn't arrive at the Amiga in one jump. We were producing captions by hand, a time-consuming business. Staff cuts led us to experiment by producing captions on a BBC B Micro to insert between our location recordings as we edited them. We did this by fitting the BBC Micro with a Cox Genlock board costing about £150. The BBC Micro's graphics area doesn't cover the whole of the video screen, but the results were quite good and software provided a range of fonts in various styles and sizes.

However to superimpose the BBC's graphics over video (or fill the whole video screen) needed additional expensive hardware. This led us to look at the Amiga.

When you allow for the cost of disc drives and memory expansions the Amiga is surprisingly competitive compared to a BBC Micro. Using the Amiga with an edit suite is a doddle – merely a matter of connecting it between the source and master machines.

Colour 0 in any Amiga palette is always transparent to video, so if you choose this for your background the original recordings will play back through it. To produce text over the video you use the mouse to select one of the other colours and type in the text on the keyboard.

If you want the video to show through a small square in the centre you draw a coloured square and copy it until only the centre is clear. To add text to this you select another colour, and so on. When your graphic is ready you use the mouse to switch off the title bar and the cursor, and then get on with editing the tapes.

Of course there are snags. One is that, despite being designed as a user-friendly machine, the Amiga can be quite difficult to get to grips with if you are not computer literate.

This is partly because the software is produced by various companies in the States, each of which adopts slightly different conventions. You have to work out for yourself how one program relates to another. Triangle TV, which supplied our Amiga, specialises in video and runs a half-day Amiga training course. Even though I decided to forego this and teach myself, Triangle was still very helpful. The effort was all worthwhile, because the software is very useful indeed.

The program TV*Text is a video captioning package with a range of 10 fonts in eight colours which can be ▶

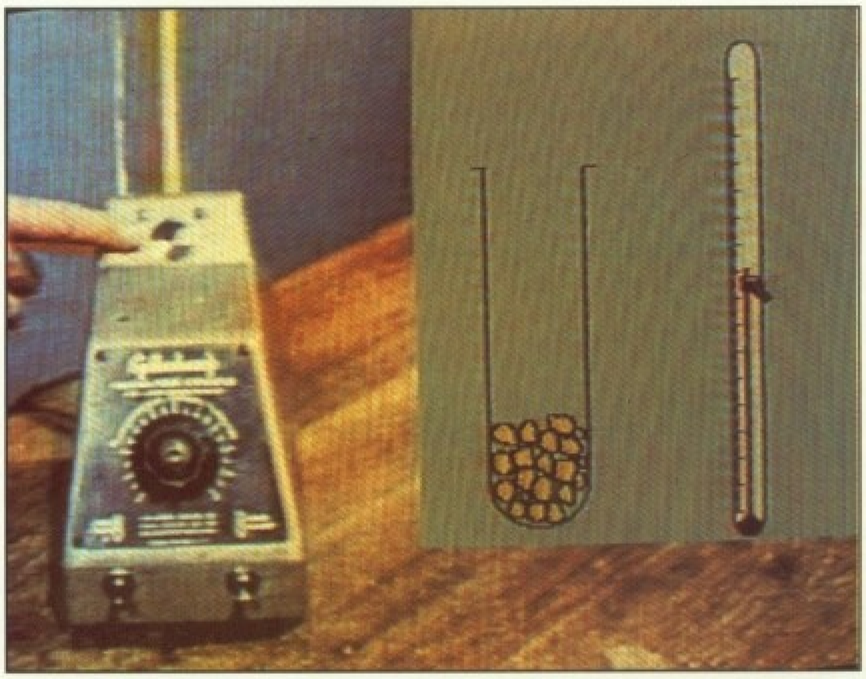


Diagram created in Deluxe Paint and video playing back through colour 0 panel. Real time animation – mercury being pushed up the thermometer by the cursor

◀

displayed in medium or high resolution. Each font can be produced in bold, italic, underlined or extruded, with shadows and outlines. Squares and circles can be produced, but diagrammatical representation is limited by the software's inability to draw diagonal or freehand lines. Fades or other transitions are not possible, nor is scrolling or any type of text movement.

During video editing the caption is either on or off. If you want to have a caption superimposed in the middle of a video sequence rather than all the way through it you need to make three edits instead of one, taking care to maintain continuity between the sound and picture.

The Pro-Video package requires at least 1Mb of memory and an external disc drive. It is less versatile at manipulating and positioning text, but more like a conventional caption generator in that all operations are carried out from the keyboard rather than from the mouse.

Up to 100 pages of captions can be held in memory and manipulated with traditional television tricks such as fades or scrolls, thus three edits with TV*Text become one with Pro-Video.

ELECTRONIC Arts' Deluxe Paint 2 is a versatile package with a range of facilities usually associated with the Quantel Paintbox. It uses the standard Amiga fonts, most of which are rather ornate and seem to be aimed at the fantasy game market, but it's possible to import more suitable ones from TV*Text.

Deluxe Paint has some interesting possibilities for animation, particularly if you're prepared to have the cursor visible on the video screen. The gradient fill facility is useful in this respect because there's a slight delay before it's executed, which gives you time to move the cursor and "park" it unobtrusively in the corner of the screen before the video edit takes place.

You can produce animations by editing a series of pictures on to videotape. Deluxe Paint is very appropriate for this because, once you've drawn your first picture, it's easy to make lots of small changes to it.

While Deluxe Paint is designed for all Amiga users, Deluxe Video is designed for desktop video. It allows you to produce a storyboard to move shapes into and around the screen. You can move text too, in very interesting ways, but again the best fonts come from TV*Text via Deluxe Paint. However, these are treated by Deluxe Video as pictures and this restricts the possible movements.

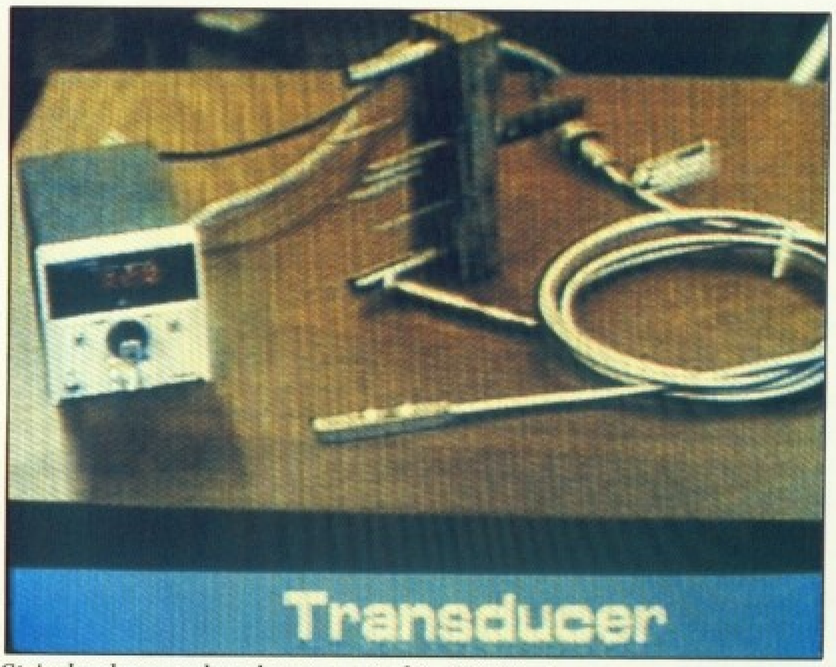
Several animation packages are available for the Amiga, but I'm afraid that I haven't found any of them particularly useful. This is because animations for our programmes, which usually concern science subjects, often require two things to be happening at once. To accomplish this with the Amiga seems to require programming ability, although, as I've indicated, careful use of Deluxe Paint can help you to overcome some limitations.

A cheap black and white camera with red, green and blue filters and NewTek's Digiview allows us to digitise a photo, illustration or still video picture in colour. We sometimes digitise in black and white using Digi-Paint or Deluxe Paint to introduce our own colours with text generated in TV*Text.

The outcome of all this new technology is that we, the poor relations in the video production business, have at last got an affordable means of competing with our rich uncles in production companies.

Our Amiga 1000, software and digitising camera cost less than £3,000. That has to be an amazing bargain for the public which finances our activities. I'm not pretending that the Amiga is the equivalent of the Quantel Paintbox, but it produces graphics of a standard adequate for the majority of videomakers, including Channel 4's The Chart Show.

THE Amiga has saved a small fortune in time and materials in just a few months. For an average programme, I can sit down at the Amiga and make the captions in the hour before we start editing. Pre-Amiga, it would take me almost as long to do a "rough" for a graphic designer to work from, and it would take him or her at least a day to come up with the finished captions on paper.



*Strip background and text created in TV*Text*

The Polytechnic has a policy of buying IBM PC compatibles, but we had to eliminate these because genlock boards and video software were not available for them at the time. They are available now, but the overall graphics abilities still lag behind the Amiga's. As far as I'm concerned, the Amiga has brought the long-awaited video revolution to our doorstep.

New Amiga software is being published very rapidly, and I'm currently looking for a two column word processor so that I can produce my initial video storyboards on the Amiga. That will probably get me close to desktop publishing, so I may be able to use it to produce students' worksheets to go with the completed video programmes.

If this is progress, I like it!

Notepad, Editor, Graphics – ACTION!

Mark Luckham assesses a video presentation package for digital doodlers

WHILE the Amiga can scarcely be described as the businessman's choice, its powerful graphics do mean that it can play an important role in the presentation of information. Applications in this field include slideshows for budding artists to show off their latest offerings, and animation sequences for use in educational and video presentations.

The Director, written by Keith Doyle, heralds itself as a professional display and animation language, and the last word of that description is of paramount importance. Bucking the current fashion The Director is not icon driven, but is an actual language. Thankfully it bears a strong resemblance to Basic, but its 80-plus commands are more orientated towards graphical special effects. For many Amiga users this is not a problem, but those who have little interest in, or predilection towards, programming are effectively barred from The Director – hardly the objective, I imagine.

For those who are interested, the results can be very rewarding – if you can produce quality images in the first place. Ah yes, because although The Director does contain commands for drawing circles, lines and ellipses, and for filling in areas, it is not an art package and will not help you produce the main images that are to be manipulated and put on show.

To do that you will need to invest in a copy of Deluxe Paint 2, which is the author's recommendation, or – as many Amiga owners received the original Deluxe Paint bundled with their machines – with the original version. The Electronic Arts package is recommended mainly because of the facility to set up the screen resolution and number of planes beforehand. But The Director is happy to work with any package that produces standard .IFF images, such as DigiPaint, Grabbit, Aegis Images and GraphiCraft.

IFF ANIM (animation format) files from products such as VideoScape 3D and 3D Sculpt are welcomed.

Before going anywhere near The Director it is advisable to first sit down and plan exactly what you are going to show, and whether you'll use an art package or digitiser to produce the images you'll use in it.

Once that's done – and it really is half the battle – further evidence of the "do-it-yourself" attitude inherent in this package comes into play when you want to get on with the programming. For that you'll need a text editor, not the most sophisticated of user interfaces to write your program, or as The Director would have it, script.

Thankfully there's one tucked away on the disc supplied. Once a script has been written, you won't know if it's to your satisfaction until later. You will have to save it and run The Director program. This produces a version of the script with the file extender .film, which can then be shown by using another program supplied, the Projector.

As far as distributing films goes, you are permitted to copy script and film files and the Projector on a non-commercial basis. If you wish to sell the fruits of your labours then an appropriate message acknowledging the use of The Director is required. The Right Answers Group, the American software house responsible for programming The Director, would also like a copy of your proposed routines and any associated manuals for its files.

Before that is likely to happen you will have to master the programming and the language's commands. The first that is likely to be used is BUFFER X, where X is the number of screen buffers that you wish to use in the program.

THE screen buffers are the cornerstone of The Director and simply represent areas in memory where pictures can be loaded. Initially 30 are defined by the software, but this can be changed to whatever you like. The only constraint is that if you define a ludicrously large number, such as 500, you will not have the memory to be able to use them all. A buffer does not in consume any memory until a picture is put into it.

Having decided on the number of screen buffers to use the next step is to put something in them. This is performed by the LOAD N,": directory/filename.extender" command, where N is the number of the buffer that the picture is being loaded into.

A strange feature here is that the first LOAD command causes a new screen to be set up with the picture specified being displayed. Any alteration made to this display will be permanent so it is necessary to copy it into another buffer immediately should you wish it to be left untouched. There appears to be no logic behind this: It happens and the user must cater for it.

To display any further buffers then use DISPLAY N with N being the buffer in question.

Once up there, what can you do to those pretty pictures? Well, FADE A,N,S where A sets whether the fade will go to or come from black, N is the buffer whose palette is to be faded to or from, and S is the speed of fade. A value of 0 for Z is the fastest fade, with 10 the slowest.

A related effect can be generated using the WIPE command to slowly scan some or all of a buffer to a specified position on the screen buffer. The interesting feature here is



that it is possible to specify in which direction the wipe occurs.

Other visual trickeries available in this department are DISSOLVE, which causes parts of the display to just fade away, and the quite complex STENCIL command, which allows you to use one buffer as a stencil during the copying of another to the screen buffer. If you want to move rectangles around then the number one command is BLIT, especially as it is tied into the Amiga's blitter chip. This makes it fast – fast enough to contemplate a technique known as screen flipping. This is where subsequent screens are displayed rapidly, and if the difference between them is not great, movement or animation is the result.

NOW, the DISPLAY command is too slow to do a good job of this with whole screens, so a technique referred to as double buffering is resorted to, where two buffers are used to prepare and display screens alternately. The BLIT command can work on smaller areas, so if you combine that with the fact that it is pretty fast, partial screen flipping is easily attainable – and very effective to boot.

Those are the major graphics special effects commands. But it is worth bearing in mind that there is a host of supporting commands, ranging from the simple drawing tools to features such as colour cycling, rotation and generating the next frame in animation data (.ANIM files).

Using text with presentations is not forgotten, especially since text is a tiny memory guzzler compared to the screen buffers. If you don't like the styles and font on offer then there is the facility to load up and incorporate others.

Sound is an important part of any presentation or "film show", but the way The Director handles this is probably the least satisfactory and most clumsy method used in the software. You must first perform an Assign mod: to the name of the directory that contains your sound.mod file.

The inbuilt commands are not going to help you produce anything in the way of music, and the emphasis is totally on using sampled sound effects and music produced from other packages. Looking at it from that point of view it deals with incorporating such sampled delights well enough. But if you don't have a sampler – no noises!

AS this is a language it's good to be able to report that the author has made at least a token effort towards structured programming. Line numbers are optional and if introduced are merely used as labels. IF.. THEN.. ELSE.. and ENDIF constructs are available along with branches depending on key and mouse states.

Unfortunately there are no procedures, use having to be made of GOTO and GOSUB. Some of the example programs in the manual are in fact fine pieces of spaghetti programming.

The manual makes a fair stab at explaining its subject matter, some of the topics being quite complex, and if understanding on some of them doesn't dawn through reading then the numerous examples should suffice to pull you through.

Conclusions

If The Director was intended to help everyone interested in presenting information in an exciting and interactive way to achieve their ambitions then it fails – because it is necessary to be able to program.

To get the best out of The Director you really must be prepared to get your fingers dirty, so to speak, and get in there.

If you are willing to do that then the measure of your artistic achievements rather depends on the quality of images and sounds that additional pieces of software and hardware can provide for the project.

Should you be assured of a quality supply of those things then The Director will provide you with the power to produce quite exciting, visually and audibly interesting presentations.

REPORT CARD

The Director
Amiga Centre, Scotland
£50

USEFULNESS
If graphics presentation is important to you The Director can handle the job.

EASE OF USE
You need too many skills and other packages to make the program shine.

INTUITION
Despite being unfriendly, this is a program that keeps to the rules.

SPEED
Reasonably fast, but the speed should not be all that important.

VALUE
Cheap by usual applications software standards, but of limited use by itself.

OVERALL 58%
A sensible price does a lot to save The Director from the trashcan.

Bloodless revolution

Jez San looks at the new Amiga OS

A NEW Amiga operating system is imminent, possibly as soon as next month. Upgrading to the much awaited 1.3 won't be quite such a dramatic change as between the 1.1 system – shipped on the Amiga A1000 – and the more recent 1.2 (rom on the A2000 and A500).

It's unlikely that any applications software will even notice the difference, which is a good thing too. Commodore has a new policy – compatibility.

Gone are the days of making radical improvements that were so original as to "break" lots of existing software that didn't follow the rules. Commodore is desperately trying to improve the Amiga and its OS in subtle ways without adversely affecting any existing programs.

Looking at the 1.3 feature list proves this – lots of changes reflecting the Commodore engineers' ideas to make the system better, faster and stronger. And unlike IBM it didn't spend six million dollars on it! It's friendlier too.

The 1.3 operating system comes in two parts: A set of enhancer discs with a new manual, Workbench and Extras, and a set of new Kickstart roms, neither of which are vital to the operation of the Amiga.

With 1.2 having been such a successful release there were relatively few bugs, most of them being on the Workbench disc and not in the Kickstart roms. Workbench 1.3 will work perfectly well with Kickstart 1.2.

THE nifty new thing in the 1.3 Kickstart is autoboot capability. This feature will allow a special autoboot hard disc, network or recoverable ram disc to operate without the need to use a Workbench floppy during bootup.

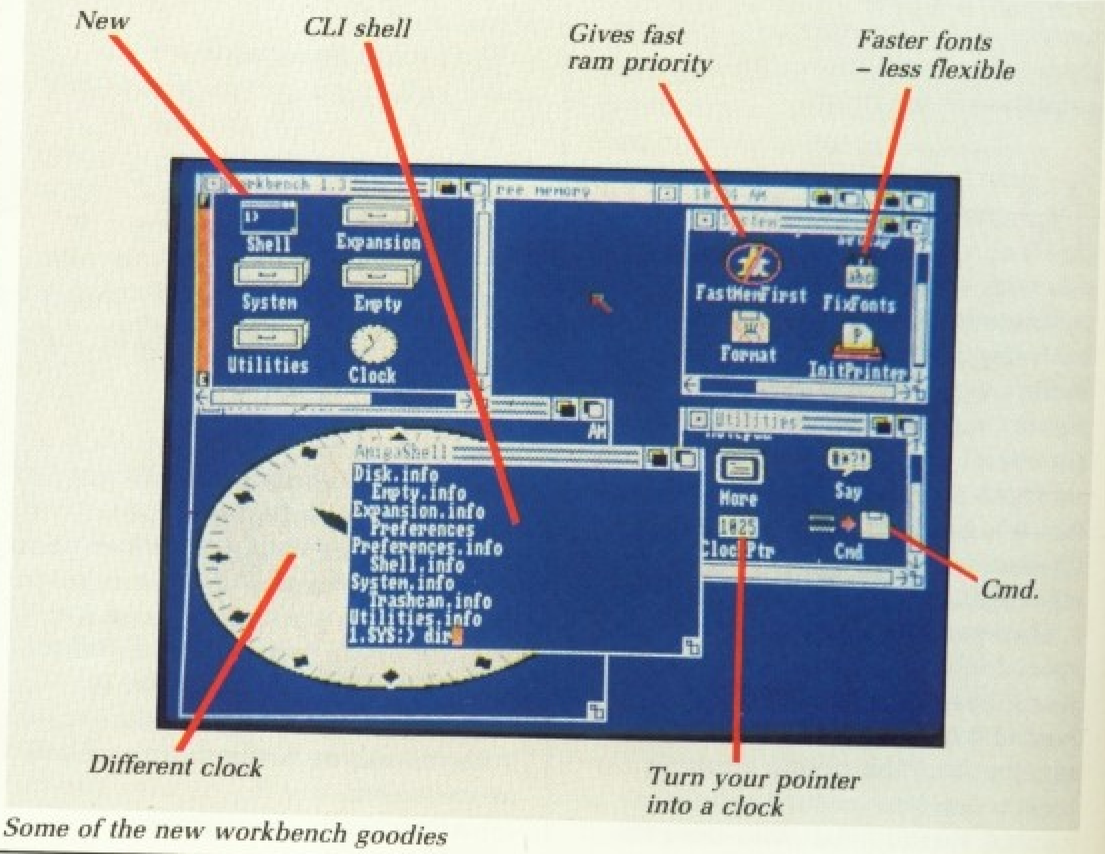
This is the only really new feature. Consequently it isn't worth upgrading your Amiga to 1.3 Kickstart roms unless you are going to use it with a special new hard disc controller, like Comodore's A2090A.

The major changes are in the 1.3 Workbench disc, which has been packed with lots of novel features. Some things, like the new Adobe fonts – they are the people who do laser printer fonts – are very pretty but not a significant reason to upgrade. Then there are the new printer drivers which are a pleasure to use. Changes behind the scenes might never affect the end user and are really only there for CLI "power users" and programmers.

The 1.3 Preferences program has been enhanced to provide better support for the new types of printers, and the nice ways of printing colour graphics that the new printer drivers are now supporting. Incidently, those 1.3 printer drivers are much faster, sometimes 10 times as fast as their old 1.2 counterparts.

There are loads of new printers to take the total number of drivers to 21. There are now separate drivers for standard and 24-pin Epsons, the HP Paintjet and the Xerox 4020 colour printer. The new dumps support all 4,096 colours. There have been substantial improvements in the way colour is handled to give either half tone or Floyd-Stienberg dithering. It is possible to restrict the number of colours printed – which improves the result, as does an anti-aliasing option. This smoothes diagonal lines by filling in pixel steps with shades of colour.

Gone is the CLI toggle, Commodore has decided not to hide this very important feature from the Amiga user's grasp. After all, the Amiga's CLI is one of its most useful and powerful concepts. To hide it from beginners because it is perhaps "too



Some of the new workbench goodies

powerful" is just a little bit condescending... "You won't understand it, therefore we won't tell you its there!" Luckily, the 1.3 CLI will always be around from day one.

A new Shell has been added to complement the CLI. This, together with a new console handler provides some really useful accessories for CLI users. They allow you to use the cursor keys to edit what you are typing, and to go backwards and forwards through things you have typed and want to recall again to repeat the last command or something you typed out a few minutes ago.

THERE are so many new benefits to this Shell that it's almost impossible to cover them in this article, but the more powerful ones include being able to make commands resident so that they are remembered in memory instead of being called up from disc every time you type something, script files which allow you to invent your own commands by stringing other commands together and definable prompts which have useful information.

Some of the best improvements made to the 1.3 Workbench are the release of a recoverable ram disc, currently called CARD: (Commodore Amiga Ram Drive) and the fast file system known affectionately as FFS to all those of us who have helped Commodore test it over the last year or so.

CARD: will keep all its files intact, even after a reboot. It's really useful to put your startup files on it so that they let you reboot quickly and painlessly.

The FFS is a specially written go-faster disc handler. It's designed to let you use all those Fast DMA (Direct Memory Access) peripherals at their maximum speeds. Commodore's A2090 hard disc controller card is one example. Data transfer speeds are on average four or five times faster, and directories and file searching can sometimes be a factor of 15 better.

The FFS streamlines the way that files are stored on a fast device so that they can be accessed a lot faster. On the old AmigaDos, there was a large overhead in processing each block of data that prevented some of the faster peripherals from being much faster than the slower ones. With the FFS installed, things run so fast that the time used in file accesses is almost totally due to the hardware card that you are using.



Better printer drivers offer more versatile shading

All hard disc controllers will run faster with FFS, but some will be very much faster, depending on how well they were designed. This is because the better ones will use special DMA circuitry to make them whizz along.

DMA lets the card transfer data quickly and automatically without involving the Amiga's processor chip or software transference techniques.

Hard disc cards that use this technique have the potential of being more than three times faster than cards that use Software techniques to transfer data.

Examples of DMA cards are Commodore's A2090, the OverDrive and ASDGs, whereas non-DMA cards, like the Supra and C-Ltd offerings, will start to lag behind the DMA cards when the FFS is used. They will still be much faster though, so it won't be too important.

EVEN better things are to come. The 1.4 OS, a major rewrite not out for a while, will have FFS built in on rom, and will be able to run with floppies too, perhaps making them about four times as fast.

Another major improvement in 1.3 lies in the Math Libraries. Apart from supporting double-precision – read, mega accurate – maths, they have been totally rewritten to offer performance improvements that everyone will love.

The Gurus at Amiga have recoded them to be at least twice as fast at most floating point operations, like adding, subtracting, multiplying and dividing.

They have also put special code so that the Motorola 68881 math co-processor is recognised and utilitised, these go 20 times faster than your average math speeds. Normally you can only add a 68881 when you are using a 68020 processor card, but some ingenious companies like Microbotics have produced a special card to allow 68881s to be connected to a stock 68000 Amiga.

What's more, the Amiga math libraries will *still* be able to detect this 68881 and will unleash the full power of the maths co-processing, turning the Amiga into a powerful workstation for very little cost.

Lastly, some novel frills have been added to Workbench, like a Pointer Clock that tells you the time whenever you are on the Workbench screen, and the normal clock that has a special one-line mode where it sits at the top corner of the screen.

I'd say that the 1.3 Workbench is a really good move on Commodore's part. For the first time it has been able to offer bags of improvements without having to worry about correcting bugs or causing various incompatibilities to any existing applications.

Commodore has suggested that the 1.3 enhancer package will be sold at a very low price to allow everyone to upgrade, but just high enough to be worth stocking by dealers to maintain availability. As a programmer, the wealth of features added to CLI and Shell are my favourites, and of course the FFS, which has made the Amiga act like a super-computer in terms of hard disc access speeds.

AMIGA COMPUTING

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Name______________________________

Address______________________________

Post Code______________________________

Occupation______________________________

Which television area do you live in?

____

How long have you had your Amiga?

____________________months

	You own	Intend to buy
A500	☐	☐
A1000	☐	☐
A2000	☐	☐
A501 ram pack	☐	☐
A521 modulator	☐	☐
CBM monitor	☐	☐
Non-CBM monitor	☐	☐
2nd CBM disc drive	☐	☐
2nd non CBM disc drive	☐	☐
PC bridgeboard	☐	☐
2090 hard disc	☐	☐
5060 hard disc	☐	☐
Other hard disc	☐	☐
Dot matrix printer	☐	☐
Colour printer	☐	☐
Laser printer	☐	☐
Genlock	☐	☐
Modem	☐	☐

Other______________________________

Are you

☐ Male ☐ Female

How old are you?

☐ Under 12
☐ 13 to 16
☐ 17 to 25
☐ 26 to 40
☐ 41 to 50
☐ 51 to 60
☐ Over 60

Did you own a computer before buying an Amiga? If so which one?

____

What is the main purpose for which you bought your Amiga?

____

____

____

____

How do you rate yourself?

☐ A beginner (I know where the power switch is)
☐ Slightly experienced (I can use CLI)
☐ Moderately skilled (I understand what a library is)
☐ Highly skilled (Intuition is my friend)
☐ An expert (I'm on first name terms with Angus, Paula and Denise)

Which program spends the most time loaded in your computer?

____

▶

◀

Which language do you use for programming your Amiga?

☐ Amiga Basic
☐ Another Basic
☐ C
☐ Modula-2
☐ Pascal
☐ Assembler
☐ APL
☐ Other ____________

Have you ever found a copy of the virus on one of your discs?

☐ Yes ☐ No

Do you belong to an online database?

☐ Microlink/BT Gold
☐ Compunet
☐ Micronet/Prestel
☐ CIX
☐ Other ______________________________

Are you a member of a user group, and if so which?

____

Rate the articles in this month's issue from 1 to 10 (ten being the best, 0 if you haven't read it).

	0	1	2	3	4	5	6	7	8	9	10
Amiga Scene	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Games reviews	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Argonauts	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
The Director	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
WordPerfect	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Using CLI	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Competition	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Workbench 1.3	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Test Drive	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Adventures	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Superbase	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Digipic	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Guru's Haunt	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Developers' meeting	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Max Factor	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

How much of *Amiga Computing* would you like to see devoted to various topics?

	More	Less	About the same
Games software	☐	☐	☐
Business software	☐	☐	☐
Basic programming	☐	☐	☐
M/c & C programming	☐	☐	☐
Other languages	☐	☐	☐
Communications	☐	☐	☐
Education	☐	☐	☐
Program listings	☐	☐	☐
Hardware projects	☐	☐	☐
Peripheral reviews	☐	☐	☐
Graphics	☐	☐	☐
Sound and Midi	☐	☐	☐

If you were the editor of *Amiga Computing* how would you change it?

____

____

How many other people look at your copy of *Amiga Computing*?

____

Which other magazines do you read?

☐ Personal Computer World
☐ Popular Computing Weekly
☐ Amiga User International
☐ Amiga World
☐ Transactor
☐ Computer and Video Games
☐ The Games Machine
☐ Ace
☐ Others ______________________________

____

In the next year how much do you expect to spend (in £s) on software?

	0-20	21-50	51-100	101-200	Over 200
Communications	☐	☐	☐	☐	☐
Word Processing	☐	☐	☐	☐	☐
Accounting	☐	☐	☐	☐	☐
Spreadsheet	☐	☐	☐	☐	☐
Database	☐	☐	☐	☐	☐
Desktop Publishing	☐	☐	☐	☐	☐
Desktop Video	☐	☐	☐	☐	☐
Educational	☐	☐	☐	☐	☐
Music	☐	☐	☐	☐	☐
Programming tools	☐	☐	☐	☐	☐
Other specialist	☐	☐	☐	☐	☐

Please detail

____

____

How much do you expect to spend (in £s) on games in the next month?

☐ 0-10 ☐ 11-20 ☐ 21-30 ☐ 31-50 ☐ 51-100 ☐ over 100

How much of your software do you buy from

A small dealer ______________%

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Which computer shows do you go to?

____

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____

Thank you

Please post to: **Survey, Amiga Computing, Europa House, Adlington Park, Adlington, Macclesfield SK10 4NP**

Amiga Answers

Q *How can I format a disc from Workbench on a single drive system?*

A Boot Workbench. Insert the disc to be formatted and click once on its icon so that it turns black. Move the pointer to the Disc drop down menu and select Initialise. You will be prompted to insert your Workbench disc so that the necessary commands can be loaded into ram.

Then after a short while you will be asked to insert the disc you wish to be formatted. Unless you want to destroy your Workbench you should remove it now and replace it with the disc to be formatted. A window will appear which lets you know which track the Amiga is working on.

Q *Why don't some of my older games work when I have installed extra memory?*

A Some early games will not work with a system which has more than 512k installed. The way to overcome this problem is to select SlowMemLast and NoFastRam from the system drawer of your Workbench disc before clicking on the game icon.

If the game selfboots you will have to remove the ram. Note that fitting a second drive uses up a tiny bit of ram, so a really big game, such as Firepower, will only work on a 512k machine if you unplug the second drive.

Q *When using Transformer, as supplied with my A500, I keep getting messages* Error Reading Sector *and* Error Writing Sector. *Why is this and how do I remedy it?*

A Transformer is only capable of reading and writing low capacity IBM format 360k or 720k discs. Standard Amiga 880k discs cannot be used. A second Transformer problem you should be aware of is that it is text based, so programs which need graphics, such as News-Room Pro, cannot be used.

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Q *How do I go about speeding up frequently used commands while I am in CLI?*

A The Amiga has a ram disc. If you copy the commands you need on to the ram disc they will execute very much faster. This is easy to do:

```
MAKEDIR RAM:C
COPY SYS:C RAM:C
ASSIGN C: RAM:C
```

This will eat into your ram, so it's worthwhile deleting the commands you don't need, such as Diskdoctor.

Q *How do I dir a non-bootable disc on a single drive machine?*

A Copy the dir command to the ram drive, as above and then cd df0: before typing dir.

Q *What are libraries and in what way are they of use to me?*

A A library is a collection of machine code routines which can be accessed by Basic to improve the performance of a program. These routines are the basis of the Amiga operating system and are split up into common groups called libraries.

For example, anything to do with the filing system will be found in the dos library (low level file open). Anything to do with graphics (plotting points, printing text) will be found in the graphics library.

Most of these libraries are resident in memory. Issuing the Library command in a Basic program will make Basic obtain the address where this library is. Any non ram-resident libraries are first loaded in. Basic will also have to know which routines – by name – can be found in the library, the address of the routine and what parameters the routines take. This information is obtained from the libraries' associated .bmap file.

The .bmap files are created by using the ConvertFD program in the BasicDemos drawer on the Extras disc. This program takes a file in the FD1.2 drawer, reads it in, and writes it back out in a form more useful to the Basic interpreter.

The .bmap file for the library you wish to use must be resident in the current directory when issuing the Library. The problem with this is that the name specified could be a file or a drawer.

To get more information you could use the Examine() routine, but that would also mean allocating 260 bytes for the file's info block. The advantage of using Examine() is that you can access and look at the comment field of the file.

With Examine – and ExNext – you could read all files in the specified path into an array and allow the user to choose a file (file selector).

Here is a sample to show how it is done:

```
DECLARE FUNCTION Lock&() LIBRARY
DECLARE FUNCTION UnLock() LIBRARY
CHDIR "Extras:BasicDemos"

LIBRARY "dos.library"
INPUT "FileName :",File$
File$=File$+chr$(0)
FilLock& = Lock&(SADD(File$),-2)
if FilLock& THEN CALL UnLock&(FilLock&)

PRINT
IF FilLock& THEN
   PRINT "File exists or Path is legal"
ELSE
   PRINT "No such file or Illegal path"
END IF

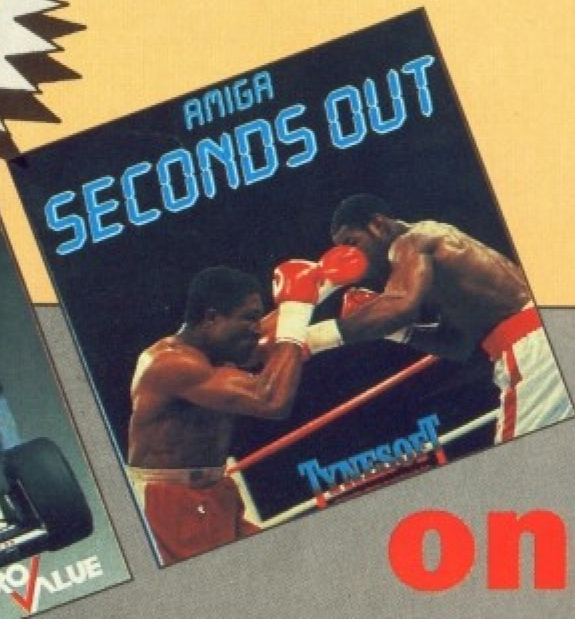
LIBRARY CLOSE

END
```

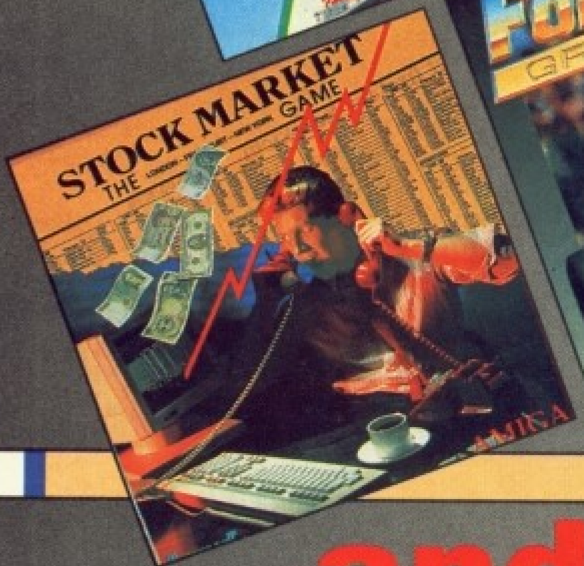
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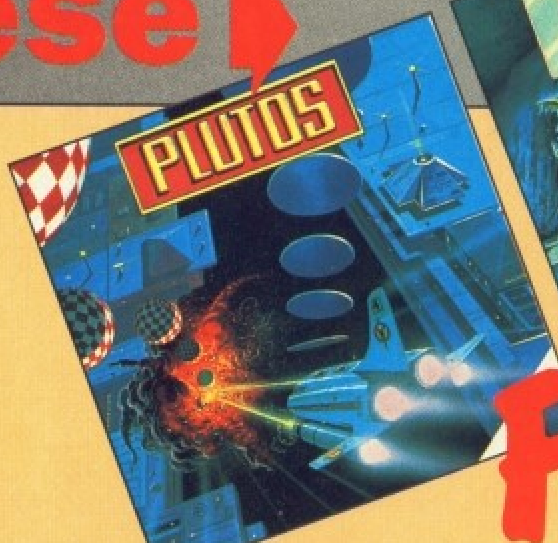






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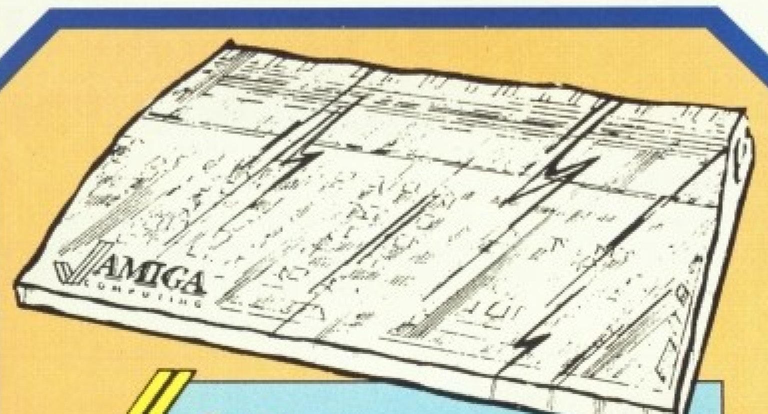
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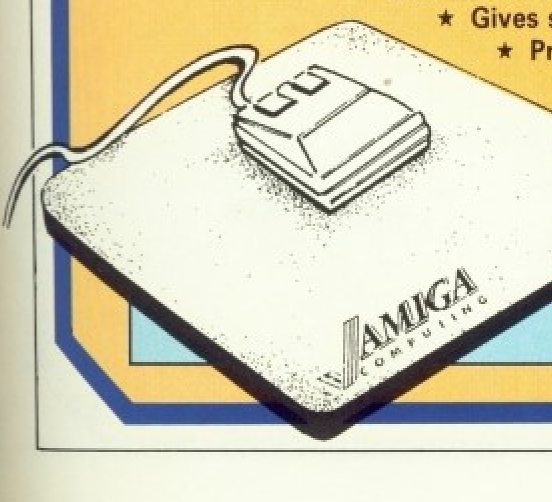
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AMC6B

Guru's haunt

MOST computers have little routines hidden away, jokes the programmers have left in the system. The Amiga goes one better by furnishing the agile-fingered user with a list of who did what.

Some notoriety has been gained for these Kickstart encoded messages which are achieved by pressing both Shifts, both Alt keys and a function key:

F1 – System software: Carl, Neil & Kodiak
F2 – Graphics software: Dale, Bart, Jimm & =RJ=
F3 – QA:Jon, Bruce, Stan, Kim & Jerry
F4 – LG Support: Caryn, Dave, Victor, Terry, Cheryl & Nancy
F5 – CBM software: Andy, Barry, Dave and Eric
F6 – Pics: Sheryl & Jack
F7 – Docs: Rick, Mitch, Peggy & Rob
F8 – Chips: Jay, Aiko, Edwin, Mark & Dave
F9 – HW: Dave, Bill ChrisR & Josh
F10 – Moral support: Joe Pillow & The Dancing Fools

More interesting are the messages you get if you press the same four keys and eject a disc, This produces the messages: "Amiga born a champion", "Amiga still a champion", and if you are quick off the mark, "We built Amiga, they ****ed it up".

Amiga Computing is a little more bashful about language than the Californians who brought us the Amiga. Many people know about the Kickstart messages, fewer know about preferences.

Preferences is a lynchpin of the Amiga. Every applications program worth its salt takes its default baud rate, screen colour and mouse speeds from the preferences file. What most people don't know is that the mice on the screen are "live", that is the buttons can accept input. If you select the buttons in the correct order you can get extra messages.

Try this: Just using the right hand mouse, click on the left button on the screen twice, then the right button twice, right twice, left twice and so on until you have clicked 16 times. Then select change printer and change to parallel. If you already have parallel selected you will need to select serial first. The title bar message should change.

A second message can be wormed out of the system by using both mice. Select the left button of the right hand mouse once, then the right hand button of the left hand mouse three times and repeat four times. Then go into the change printer menu and select fine pitch. You should be rewarded with a new message.

There are eight others hidden in there, but our Commodore contact is unwilling to spill the beans. *Amiga Computing* will give the first person to find one of the missing eight messages a game of their choice.

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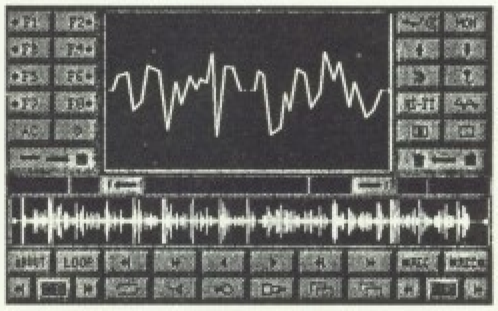
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